

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL COAST REGION**

81 Higuera Street, Suite 200
San Luis Obispo, California 93401-5427

ORDER NO. 94-63

**CLOSURE WASTE DISCHARGE REQUIREMENTS
FOR
CITY OF SANTA MARIA
CLASS III LANDFILL
SANTA BARBARA COUNTY**

The California Regional Water Quality Control Board, Central Coast Region (hereafter Board), finds that:

1. The City of Santa Maria (hereafter "Discharger"), 110 East Cook Street, Santa Maria, CA 93454, owns and operates the City of Santa Maria Class III Landfill (hereafter "Landfill").
2. The 290 acre Landfill is located in the Santa Maria Valley, along the eastern edge of the City of Santa Maria, adjacent to the Santa Maria River as shown on Attachment "1" included as part of this Order. The site is located about three miles east of U.S. Highway 101 at 2065 East Main Street, Santa Maria, CA 93454. The site encompasses portions of Sections 4, 8, 16, and 17, Township 10N, Range 33W, and Section 1 and 2 Township 10 North, Range 34 West, San Bernardino Baseline Meridian. Santa Barbara County Assessor as Assessor Parcel Numbers 128-094-15 and 40.
3. These Waste Discharge Requirements (Requirements) are being revised/updated to incorporate criteria currently applicable to solid waste disposal sites, particularly:
 - a. criteria established in California Code of Regulations, Title 23, Division 3, Chapter 15 (Chapter 15), including Article 5, pertaining to landfill water quality monitoring and response programs, as amended July 1, 1991;
 - b. criteria established in 40 CFR Parts 257 and 258 Solid Waste Facility Disposal Criteria, Final Rule (Known as "Subtitle D"), as promulgated October 9, 1991.
4. This Order revises/updates and replaces Order No. 90-38, as adopted by the Board on May 11, 1990. Order No. 90-38 regulated all waste discharges to the Landfill. Implementation of applicable revised Article 5 monitoring requirements and various other pertinent landfill changes, including compliance with other state (Title 14) and Federal (Subtitle D) landfill regulations, will bring the Landfill into compliance with current landfill requirements.

Physical Description: Geology

5. Land use within one mile of the Landfill is residential, agricultural, commercial, and recreational. The residential land uses consist of several existing residential areas, additional proposed residential areas, and agriculturally associated residences. Commercial land uses are comprised of commercial, industrial, and manufacturing facilities, as well as three radio transmission towers on site. Agricultural land uses include crop lands, a dairy, grazing lands, and agricultural associated buildings. Recreational land uses are public stables, a school, and a park.
6. The Landfill topography is essentially flat with average slopes of approximately 0.5%. The elevation ranges from 240 feet above mean sea level (msl) at the northwestern boundary to approximately 300 feet msl at the active southwestern portion. The 60 foot elevation change occurs over the greater than two mile length of the landfill. The relatively flat area has a southeast to northwest topographic downward gradient following the Santa Maria River.

7. The Discharger's data demonstrate natural geologic materials between the base of the WMU and ground water cannot ensure that degradation of beneficial uses of ground water beneath or adjacent to the Landfill will not occur.
8. The regional geologic setting of the Landfill is typically unconsolidated alluvial deposits common to the Santa Maria Valley. The alluvial deposits from the Holocene age form shallow soils that are mostly composed of sand and gravel intermingled with sandy clays and silts. Underlying sediments extend to a depth of about 100 feet. Beneath the sand, gravel, silt, and clay lies Pleistocene interbedded sand and gravel (Orcutt Sand) and a more consolidated sand, silt, and clay (Paso Robles Formation). Below the Orcutt Sand and Paso Robles Formation is consolidated Tertiary marine sandstone/claystone underlain by a Franciscan metavolcanics basement. All soils on site (Metz loamy sand, Mocho sandy loam, and Metz sandy alluvial soils) are characterized by having sandy texture, rapid permeability, slow runoff potential, and low erosion potential. Native soils have permeabilities that range from 1×10^{-2} to 1×10^{-4} cm/sec and do not provide adequate assurance of leachate containment.
9. There are several active, potentially active and inactive faults in the Santa Maria River Basin. The nearest fault to the Landfill is the Santa Maria River Fault which is within one mile of the site. The Santa Maria River Fault is considered to be active with a maximum probable earthquake (MPE) of Richter Magnitude 6.5. The MPE peak ground acceleration of the Santa Maria River Fault is 0.6 g's.

Water Resources

10. The Landfill is protected from the 100-year return frequency flood by the Santa Maria River Levee. The average annual precipitation at the Santa Maria weather station for the period of 1951-1980 is 12.35 inches with approximately 91% falling between November and April. The heaviest rainfall generally occurs in February with the maximum average monthly precipitation of 2.6 inches. Some drainage waters originating on the Landfill are directed toward the perimeter drainage channel. Off-site drainage waters are directed to enter a perimeter drainage channel

without crossing the Landfill area. The drainage channel eventually drains into the Santa Maria River through two culverts. The Santa Maria River Drains a large watershed that crosses over and could overflow the site in a significant flood event. Twitchell Dam contains storm runoff upstream of the landfill and releases water during the dry season. During releases surface flow occurs in the river adjacent the Landfill.

11. There are two general aquifer types at the Landfill. An alluvial aquifer with a relatively high hydraulic conductivity overlies the Paso Robles Formation aquifer. Ground water levels have historically varied and range from 18 feet to 231 feet below ground surface. The general direction of ground water flow is from east to west and under the site; it seasonally flows northeast to southwest. The ground water gradient is about 10 feet per 1000 feet (0.01 ft/ft). Hydraulic conductivity of the aquifer is considered to be in the range of 3 to 12 feet per day. Using a reasonable estimate of 25% for the effective porosity of the alluvial aquifer, ground water infiltration is determined (ground water flow velocity equation) to be 0.1 to 0.5 feet per day in the alluvial aquifer.
12. There are approximately 20 domestic irrigation and livestock water wells within 1 mile of the site. Many of these wells have tested positive for low levels of volatile organic compounds downgradient of the Landfill.
13. Typical water quality in the basin exhibits a natural calcium-magnesium sulfate chemical nature. The total dissolved solids (TDS) concentrations range from an average of 750 mg/L to 900 mg/L. TDS concentrations at background wells range from an average of 770 to 870 mg/L, and at compliance wells average from 750 to 910 mg/L. The pH data average from 6.9 to 7.1. A trend towards an increase in bicarbonate ion concentrations, possibly accompanied by a reduction in sulfate ion concentrations is indicated by some downgradient wells. During the Winter/Spring 1994 reporting period selenium in well MW-4R and iron in well MW-5R exceeded Maximum Contaminant Levels (MCLs). Selenium has not been previously analyzed and represents a new discovery; however, iron in well MW-5 had been

essentially non-detect until mid 1993 and levels have risen steadily to the most recent sampling round. Gas transfer cannot account for the transfer of metal contamination to the ground water. MCL exceedances for Volatile Organic Compounds (VOCs) and metals only are reported downgradient of the active fill area. VOCs have been detected from on-site monitoring wells. Persistent sporadic occurrences of PCE, trichloroethene, 1,1,1-trichloroethane, and isomers of dichloroethene have been recorded historically usually below MCLs until fall 1993 when MCLs for VOCs were exceeded. Since late 1992 and early 1993 wells downgradient of the active fill area have consistently detected VOCs and generally at increasing levels.

14. No routine surface water or vadose zone monitoring has been conducted. VOCs in ground water have been attributed to gas migration from the Landfill by the facility consultant's interpretation.

Beneficial Uses

15. The Water Quality Control Plan, Central Coast Basin (Basin Plan), was adopted by the Board on November 17, 1989 and amended February 8, 1994. The State Water Resources Control Board approved the Basin Plan on August 16, 1990 and the Basin Plan amendments on May 18, 1994. The Basin Plan incorporates statewide plans and policies by reference and contains a strategy for protecting beneficial uses of State Waters. This Order implements the water quality objectives stated in the Plan.
16. Present and anticipated beneficial uses of surface waters (Santa Maria River) downgradient of the discharge include:
- a. municipal and domestic supply;
 - b. agricultural supply;
 - c. industrial supply;
 - d. ground water recharge;
 - e. water contact recreation;
 - f. non-contact water recreation;
 - g. wildlife habitat;
 - h. warm fresh water habitat; and
 - i. fish migration.

17. Present and anticipated beneficial uses of ground water in the vicinity of the discharge include:

- a. municipal and domestic supply;
- b. agricultural supply;
- c. industrial supply; and
- d. limit ground subsidence from overdrafting.

Landfill Specifics

18. The operating permit for the Landfill was issued by the County of Santa Barbara to the City of Santa Maria. This is the Solid Waste Facility Permit 42-AA-016.
19. The existing Landfill consists of a 68 acre inactive portion, a 134 acre active portion, and an 88 acre proposed area from which borrow material has been derived. The Landfill can accept 550 tons of solid waste per day in accordance the County of Santa Barbara's Stipulated Order of Compliance. Disposal on the active area is required not to exceed an elevation of 325 feet above MSL according to the November 1990 Site Operation Plan recognized in Order No. 90-38. The proposed existing use of the Landfill under previous operations suggests a remaining capacity of approximately 3,000,000 cubic yards in the active area (excluding cover material) with a potential remaining life up to the summer of the year 2002. Prior to 1992, the Landfill operated using a trench and fill method. Currently the Landfill operates using an "area" fill method. Existing Order No. 90-38 specifies closure in the year 2002. Emcon Associates "Preliminary Closure and Postclosure Maintenance Plan for the Santa Maria Landfill" suggests closure in the year 2018. Considering current site conditions and the history of ground water contamination from the landfill (VOC detections, alluvial soil material, and capacity), this Order requires final closure when the currently permitted landfill space is filled.
20. The Landfill met former criteria of the California Code of Regulations as stated in Chapter 15 for classification as an existing Class III landfill suitable to receive non-hazardous solid wastes. This Order implements the prescriptive standards and performance goals of Chapter 15, as adopted by the State Water Resources Control Board on October 18, 1984, and as amended on July 1, 1991. The Landfill does not meet the current

Federal Subtitle D requirements for lateral landfill expansions due to the lack of a composite liner.

21. The Landfill location is less than favorable. The site is above a primary ground water recharge area for the Santa Maria Valley. Contamination from the landfill is a likely contributor to chemical anomalies found in water supply wells in northeastern Santa Maria Valley. Ground water level measurements show ground water occasionally rises into the Landfill.
22. The Landfill is known to be polluting ground water. As the Landfill continues to operate, it continues to threaten water quality degradation. This is due to coarse porous natural material under the Landfill, the same material being used as cover and the lack of slope on the Landfill surface. The proximity to the Santa Maria River increases the water quality threat by causing high ground water under the Landfill.
23. Wastes containing greater than one percent (>1%) friable asbestos are classified as hazardous under California Code of Regulations, Title 22. Since such wastes do not pose a threat to water quality, Section 25143.7 of the Health and Safety Code permits its disposal in permitted landfills, providing waste discharge requirements specifically allow the discharge and the wastes are handled and disposed in accordance with other applicable State and Federal statutes and regulations.

Statements of Regulation

24. Due to revisions of Article 5, of Chapter 15, the Discharger submitted a June 26, 1992 Revised Report of Waste Discharge to update Waste Discharge Requirements for the Landfill, including a Monitoring and Reporting Program. It includes proposals for an improved ground water detection monitoring program, surface and vadose zone monitoring programs and the establishment of a financial assurance instrument to cover all expenses related to future corrective action costs. Letters from the Executive Officer to the Discharger dated July 16, 1993 and August 31, 1994, requires an improved Landfill monitoring plan by January 15, 1995 because the distance between some monitoring wells is as much as 2,500 feet.

25. On October 9, 1991, the Environmental Protection Agency (US EPA) promulgated regulations pertaining to solid waste disposal facilities known as 40 CFR, Parts 257 and 258 Solid Waste Disposal Facility Criteria, Final Rule (also known as Subtitle D). California received US EPA authorization (became an "Approved" State) to implement the Federal Subtitle D regulations. The Subtitle D regulations for the Landfill became effective and self-implementing on October 9, 1993. The Subtitle D regulations establish minimum criteria for location, design, operation, clean-up, and closure for most municipal solid waste landfills. Subtitle D implementation/applicability is as follows:

- a. Municipal solid waste landfills with Requirements that stopped receiving waste on or before October 9, 1991 are exempt from Subtitle D except for monitoring requirements and deed restrictions.
- b. Municipal solid waste landfills that receive waste on or after October 9, 1991, but stop prior to October 9, 1993, must meet only the final cover requirements specified in Section 258.60(a).
- c. Municipal solid waste landfills that receive waste on or after October 9, 1993 must comply with all requirements of Subtitle D.

Federal Subtitle D ground water and corrective action requirements become effective October 9, 1994 for the Landfill and lateral expansions. Financial assurance requirements become effective April 9, 1995.

26. Discharge of waste is a privilege, not a right, and authorization to discharge waste is conditioned upon the discharge complying with provisions of Division 7 of the California Water Code and with any more stringent limitations necessary to implement the Basin Plan, to protect beneficial uses, and to prevent nuisance. Compliance with this Order should assure conditions are met and mitigate any potential changes in water quality due to the project.

27. The City of Santa Maria Department of Public Works, in October 1993, certified a Final Environmental Impact Report (EIR) in accordance with the California Environmental Quality Act (Public Resources Code Section 21000 et seq.) entitled "Final Environmental Impact Report Santa Maria Landfill Site Facility Permit".
28. This Order contains prohibitions, discharge specifications, water quality protection standards, and provisions intended to protect the environment by mitigating or avoiding impacts of the project on water quality. This Order is for an existing facility and as are exempt from provisions of the California Environmental Quality Act (Public Resources Code, Section 21000, et seq.) in accordance with Title 14, California Code of Regulations, Chapter 3, Section 15301.

Board Dates

29. On June 24, 1994 the Board notified the Dischargers and interested agencies and persons of its intention to update the Waste Discharge Requirements and has provided copies of the proposed Order and an opportunity to submit written views and comments.
30. After considering all comments pertaining to this discharge during a public hearing on November 18, 1994, this Order was found consistent with the above findings.

IT IS HEREBY ORDERED pursuant to authority in Section 13263 of the California Water Code, the City of Santa Maria, its agents, successors, and assigns may discharge wastes at the Santa Maria Class III Landfill, providing compliance is maintained with the following:

(Throughout this Order, footnotes are listed to indicate the source of requirements specified. Footnotes are as follows:

^a=CCR, Title 23, Chapter 15

^b=Basin Plan

^c=CFR, Part 257 and 258 (Subtitle D)

^d=California Water Code

Requirements without footnotes are based on professional judgement.)

A. DISCHARGE PROHIBITIONS

General Prohibitions

1. Discharge of waste to areas outside the designated disposal area, as defined by the Federal Subtitle D footprint and shown as the active and inactive areas identified on Attachment 2, is prohibited.
2. Discharge of wastes where refuse placement has not occurred, is prohibited.
3. Discharge of hazardous waste, except for waste that is hazardous due only to its asbestos content, is prohibited. For the purposes of this Order, the term hazardous waste is defined in Chapter 15.^a
4. Discharge of designated waste is prohibited except when the discharger demonstrates to the Executive Officer's satisfaction that waste constituents present a lower risk of water quality degradation than indicated by this classification. For the purpose of this Order the term "designated waste" is defined in Chapter 15.^a
5. Discharge of "liquid wastes" or "semi-solid wastes" (i.e., wastes containing less than 50 percent solids by weight), other than leachate and gas condensate as described in Discharge Specification B.20 and dewatered domestic sludge is prohibited. Exemptions to discharging wastes containing less than 50% solids by weight may be granted by the Executive Officer if the Discharger can demonstrate the discharge will not exceed the moisture-holding capacity of the Landfill, either initially of a result of waste management operations, compaction, and/or settlement.^a
6. Discharge of dewatered sewage or water treatment sludge, which contains less than 50% solids by weight to any Landfill areas, shall meet conditions identified in Discharge Specification B.17.^a
7. Discharge of waste to ponded water from any source is prohibited.^a
8. Ponding of liquids over solid wastes is prohibited.^a

9. Discharge of leachate or gas condensate containing hazardous concentrations of constituents is prohibited.^a
 10. Discharge of wastes that would reduce or impair the integrity of containment structures is prohibited.^a
 11. Discharge of wastes which, if commingled with other wastes in the unit, could produce violent reaction, heat or pressure, fire or explosion, toxic by-products, or reaction products which in turn:
 - a. require a higher level of containment than provided by the Landfill,
 - b. are restricted hazardous wastes, or
 - c. impair the integrity of containment structures, is prohibited.^a
 12. Discharge (includes storage, disposal and treatment) of wastes within five (5) feet of the highest anticipated water table elevation, including the capillary fringe, is prohibited. If excavations encounter ground water or come within five (5) feet of ground water, native soil shall be replaced and compacted to satisfy this specification.^a
 13. Discharge of waste within 50 feet of the property line, 100 feet of surface waters, or 100 feet of domestic water supply wells is prohibited.
 14. Discharge of solid or liquid waste or leachate to surface waters, drainageway(s), or ground water, is prohibited.
 15. Discharge of solid or liquid waste containing free liquid or moisture in excess of the waste's moisture holding capacity is prohibited. Waste must pass the paint filter test to determine if free liquids are present.^{a,c}
 16. Discharge of waste solvents, dry cleaning fluids, paint sludge, pesticides, phenols, brine, and acid and alkaline solutions is prohibited.^a
 17. Discharge of oils or other liquid petroleum products is prohibited.
 18. Discharge of chemical and biological warfare agents is prohibited.
 19. Discharge of leachate or landfill gas condensate to any landfill Waste Management Unit (WMU) is prohibited, unless:
 - a. The Landfill gas condensate or leachate is being returned to the Landfill WMU that produced it; and
 - b. The portion of the Landfill to which these materials are discharged is equipped with a containment system as outlined in Specification B.43, below.^c
 20. Discharge of radioactive waste is prohibited.
 21. Except as provided by Discharge Prohibition A.22. below, discharge of any waste is prohibited after the final refuse fill elevations are reached.
 22. Discharge is prohibited as soon as an alternative to landfilling at this site is implemented, even if it occurs before the maximum elevation allowed by this Order has been reached. In such case, closure specifications shall be implemented.
 23. Discharge of wastes other than municipal solid waste and inert waste in the active area is prohibited.
 24. Discharge of waste other than inert waste in the inactive area is prohibited.
- B. DISCHARGE SPECIFICATIONS**
- General Specifications**
1. The Discharger shall implement the attached Interim Monitoring and Reporting Program (MRP) No. 94-63 to detect, at the earliest opportunity, any unauthorized discharge of waste constituents from the Unit, or any unreasonable impairment of beneficial uses associated with (caused by) discharges of waste to the Unit.^a The Executive Officer may revise MRP No. 94-63 according to the City of Santa Maria's improved landfill monitoring plan due January 15, 1995.

2. Discharge of waste shall not cause the concentration of any Constituent of Concern or Monitoring Parameter to exceed its respective background value in any monitored medium at any Monitoring Point assigned to Detection Monitoring pursuant to the current version of the MRP.
3. Discharge of waste shall not cause the release of pollutants, or waste constituents in a manner which could cause a condition of pollution or nuisance to occur, as indicated by the most appropriate statistical [or non-statistical] data analysis method and retest method listed in the MRP, Part II.^{a,d}
4. Discharge of waste shall neither cause nor contribute to the pollution of ground water via the release of waste constituents in either solid, liquid or gaseous phase.
5. Discharge of waste shall neither cause nor contribute to any surface water pollution or nuisance, including, but not limited to:
 - a. floating, suspended, or deposited macroscopic particulate matter or foam;
 - b. increases in bottom deposits or aquatic growth;
 - c. an adverse change in temperature, turbidity, or apparent color beyond natural background levels;
 - d. the creation or contribution of visible, floating, suspended, or deposited oil or other products of petroleum origin; and
 - e. the introduction or increase in concentration of toxic or other pollutants/contaminants resulting in unreasonable impairment of beneficial uses of waters of the State.
6. The discharge of waste shall not cause any increase in the concentration of waste constituents in soil-pore gas, soil-pore liquid, soil, or other geologic materials outside of the Landfill if such waste constituents could migrate to waters of the State in either liquid or gaseous phase and cause a condition of pollution or nuisance.
7. With written approval of the Executive Officer, water (including non-hazardous and non-designated leachate and gas condensate) used during disposal site operations shall be limited to the minimal amount necessary for dust control, construction (soil compaction), and vegetation establishment/irrigation purposes. The Discharger shall minimize the infiltration of rain-water and prevent infiltration of leachate or gas condensate into areas containing refuse, except as allowed by Prohibition A.19. Water, leachate and condensate, used at the Landfill, shall not infiltrate into areas containing wastes.
8. Disposal site operations shall not be a source of odor nuisance.
9. The Discharger shall prevent formation of a habitat for carriers of pathogenic microorganisms.
10. The handling and disposal of asbestos containing wastes shall be in accordance with all applicable Federal, State, and local statutes and regulations.
11. Ash wastes may be discharged in the Landfill only when chemical analyses demonstrate to the Executive Officer's satisfaction that the waste is non-hazardous.
12. Wastes discharged in violation of these Requirements and after the adoption date of this Order, shall be removed and relocated for proper disposal.
13. All refuse material wind-blown outside the active Landfill area shall be collected regularly and disposed in the Landfill. If wind-blown litter has been a continuing problem, additional containment barriers (additional screens and/or fences) shall be constructed to prevent spreading of refuse.
14. The Discharger shall obtain and maintain a Board approved Financial Assurance Instrument (Instrument) to demonstrate financial responsibility for initiating and completing corrective action of all known or reasonably foreseeable releases from the Landfill until the end of the Post-Closure Maintenance Period, pursuant to Chapter 15 regulations. The Instrument shall be legally valid, binding and enforceable under State and Federal law.^a

15. A program for periodic intake load-checking shall be maintained to ensure "hazardous waste," "designated waste" and "radioactive waste" are not discharged at this Landfill.^a
 16. The Discharger shall operate the Landfill in conformance with the most recent Executive Officer approved Master Plan, Operations Plan, and/or Site Development Plan, except where the Plan(s) conflict with this Order. In the event of conflict, this Order shall govern in cases where it is most restrictive. Any changes to the Plan(s) that may affect compliance with this Order must be approved in writing by the Executive Officer after a public hearing approval before the Board.^{a,d}
 17. Discharge of dewatered sewage sludge or water treatment sludge to the Landfill shall meet all of the following criteria:
 - a. dewatered domestic sludge which is utilized beneficially as soil amendment to promote vegetation over intermediate or final cover may be allowed with written Executive Officer approval;
 - b. sludge discharged into the Landfill shall be only to Units equipped with a dendritic/blanket-type leachate collection and removal system (LCRS) or acceptable equivalent immediately above the liner. However, if the sludge contains greater than 50% solid by weight, an LCRS may not be required depending on site specific conditions and upon Executive Officer approval;
 - c. a daily minimum solid waste-to-sludge ratio of 5 to 1 by weight shall be maintained to ensure co-disposal will not exceed the moisture-holding capacity of the nonhazardous solid waste. The actual ratio required by the Board shall be based on site-specific conditions;
 - d. primary and mixtures of primary and secondary sludge shall contain at least 20 percent solids by weight; and,
 - e. secondary sewage sludge or water treatment sludge shall contain at least 15 percent solids by weight.
 18. Waste shall not be discharged to a wetland, as defined in 40 CFR Section 232.2(r), or to any portion thereof, unless the Discharger successfully completes all demonstrations pursuant to 40 CFR Section 258.12(a). Such demonstration is subject to approval of the Executive Officer.^c
 19. Refuse shall be covered daily by at least six inches of cover material or, if allowed by the Local Enforcement Agency, meet Performance Standards of the California Code of Regulations, Title 14, Section 17683. Cover shall promote lateral runoff of rainfall away from the active disposal area. Upon Executive Officer approval, alternative daily cover materials may be utilized. Long-term alternatives to the daily cover requirements must satisfy the alternative daily cover procedures and be approved by the California Integrated Waste Management Board.^a
 20. Condensate collected from the methane gas recovery operation may be discharged to a Waste Management Unit if the following conditions are met:
 - a. the Landfill condensate or leachate shall be returned to the appropriately lined portion of the Landfill that produced it. The containment system must meet the performance standard of Discharge Specification B.41, of this Order;
 - b. condensate shall have no chemical additives which could adversely affect containment features, and shall consist only of water and liquid contaminants removed from the gas recovered at a WMU; and,
 - c. condensate is discharged only in compliance with this Order.
- Wet Weather**
21. By October 1 of each year, all necessary runoff diversion and erosion prevention measures shall be implemented. All necessary construction, maintenance, or repairs of precipitation and drainage control facilities shall be completed to prevent erosion or flooding of the Landfill and to prevent surface drainage from contacting or percolating through wastes.^a

22. All Landfill surfaces and working faces shall be graded and operated to minimize rainfall infiltration into wastes, to prevent ponding of water, and to resist erosion. Positive drainage to divert rainfall runoff from areas containing waste shall be provided.
23. Drainage ditches crossing over Landfill areas shall be lined with material which provides an effective field permeability (e.g., sealed double ring infiltrometer test) of 1.0×10^{-6} cm/sec or less. If material other than clay or synthetic is used, data must be provided to, and approved by, the Executive Officer. The drainage facilities shall be designed and constructed to accommodate anticipated precipitation and peak surface runoff flows from a 100-year, 24-hour event.
24. Water collected in any storm water catchment basin or a site water treatment facility may be used in minimum amounts necessary for dust-control, compaction, or irrigation of cover vegetation provided none of the water infiltrates past the root zones of vegetation or past a depth where effective evaporation can occur. Water quality in stormwater catchment basins shall be monitored periodically no less than annually if water is in storage at any time that year.
25. Waste containment barriers shall be maintained to ensure effectiveness.^a
26. The Discharger shall monitor potential releases from the site related to surface water runoff by complying with all NPDES Stormwater Monitoring Program requirements.
27. Storage facilities associated with precipitation and drainage control systems shall be emptied immediately following each storm, or otherwise managed, to maintain the design capacity of the system.^a
28. A minimum of two feet of freeboard shall be maintained in all leachate containment tanks. Leachate tanks shall be designed to avoid failure or leakage as a result of seiches.₁
29. If adequate soil cover material is not accessible during inclement weather, such material shall be stockpiled during favorable weather to ensure year-round compliance.^a
30. Throughout the rainy season of each year, a minimum one (1) foot thick compacted soil cover designed and constructed to minimize percolation of precipitation through wastes, shall be maintained over the entire WMU.^b The soil cover shall be in-place by October 1 of each year. The only exception to this specification is the working face. The working face shall be confined to the smallest area practicable based on the anticipated quantity of waste discharged and required waste management facility operations. Landfill areas which have been provided an Executive Officer approved vegetative layer as of the adoption date of this Order, shall not be required to satisfy this requirement. Based on site specific conditions, the Executive Officer may require a thicker soil cover for any portion of the active WMU prior to the rainy season.
31. By October 1, of each year, vegetation shall be planted and maintained over all Landfill slopes within the entire Landfill area to prevent erosion. Vegetation shall be selected to require a minimum of irrigation and maintenance and shall have a rooting depth not in excess of the vegetative layer thickness. Upon Executive Officer approval, non-hazardous sludge may be conditionally utilized as a soil amendment to promote vegetation. Upon written Executive Officer approval, non-hazardous sludge may be conditionally utilized as a soil amendment to promote vegetation. Soil amendments and fertilizers (including wastewater sludge) used to establish vegetation shall not exceed the vegetation's agronomic rates (i.e., annual nutrient needs), unless approved by the Executive Officer.
32. A complete liquid mass balance shall be performed for all Units and drainage facilities based on Chapter 15 prescriptive design parameters, and shall be submitted to the Board by April 15, 1995.

Design Criteria

33. Waste management units, containment structures, and drainage facilities shall be designed, constructed and maintained to limit, to the greatest extent possible, ponding, infiltration, inundation, erosion, slope failure, washout, overtopping, and damage due to natural disasters (e.g., floods with a predicted frequency of once in 100 years, the maximum probable earthquake, and severe wind storms).^a
34. Waste management units, containment structures and drainage facilities shall be designed and constructed under the direct supervision of a California Registered Civil Engineer or a Certified Engineering Geologist, and shall be certified by that individual as meeting the prescriptive standards and performance goals of all State and Federal landfill regulations including, but not limited to Chapter 15, Title 14 (of the CCR) and 40 CFR Parts 257 and 258, prior to waste discharge.^{a,c}
35. All Landfill facilities shall be designed and constructed to minimize damage during the "maximum probable earthquake" to the graded foundation and to structures which control leachate, surface drainage, erosion, and gas. The operator must demonstrate all containment structures, including liners, leachate collection and removal systems, and surface water control systems are designed to resist the maximum horizontal acceleration in lithified earth material for the site. The owner or operator must place the demonstration in the operating record and notify the Executive Officer it has been placed in the operating record.
36. The Discharger shall ensure the integrity of the final slopes under both static and dynamic conditions considering seismic acceleration at least from the maximum probable earthquake. The slope of those portions of the fill which will be the final exterior surface shall be developed in accordance with California Code of Regulations, Title 23, Division 3, Chapter 15, Subsection 2581, and the following:
 - a. all slopes shall have a minimum of one 15-foot wide bench for every 50 feet of vertical height;
 - b. slopes shall not be steeper than a horizontal to vertical ratio of 1.75:1 (57%); and,
 - c. slopes steeper than a horizontal to vertical ratio of 3:1 (33%) shall be supported by a slope stability analysis report approved by the Executive Officer.
37. The inactive area landfill surface shall be graded to drain with the required 5% slope by October 31, 1998. A 5% slope shall be provided for the active area in accordance with the Site Operations Plan. A written report specifying completion of the inactive landfill surface slope shall be in writing to the Board by **November 10, 1998**.
38. Wastes shall not be discharged to areas outside the footprint area which had not received waste as of October 9, 1993, without prior Board approval and unless the discharge is to an area equipped with a containment system, which meets either a. or b. below:
 - a. a composite liner and a leachate collection and removal system. The liner must consist of two components:
 - i. Lower Component: A minimum two-foot layer of compacted soil with a hydraulic conductivity of no more than 1×10^{-7} cm/sec (0.1 feet/year); and
 - ii. Upper Component: A minimum 40-mil flexible membrane liner (FML) or a minimum 60-mil high density polyethylene (HDPE). The upper component must be installed in direct and uniform contact with the lower component; or
 - b. an engineered alternative design. Engineered alternative designs must satisfy the performance criteria in 40 CFR, Section 258.40(a)(1) and (c), and satisfy the criteria for an engineered alternative to the above Prescriptive Design, as provided by Title 23, CCR, Section 2510 (b), where the performance of the alternative composite liners' components, in combination, equal or exceed the waste containment capability of the Prescriptive Design.^d

Installation of this liner must receive written approval from the Executive Officer. Before waste can be placed in the newly lined area, adoption of new Waste Discharge Requirements are required by the Board.

39. Permeability determinations shall be as specified in Article 4 of Chapter 15. Permeabilities specified for containment structures other than cover shall be relative to the fluids, including waste and leachate, to be contained. Permeabilities specified for cover shall be relative to water. Permeabilities shall be determined primarily by appropriate field test methods in accordance with civil engineering practice (sealed double ring infiltrometer test is required). The results of laboratory tests with both water and leachate, and field tests with water, shall be compared to evaluate how the field permeabilities will be affected by leachate. Appropriate compaction tests may be used in conjunction with laboratory permeability tests to determine field permeabilities as long as a reasonable number of field permeability tests are also conducted.^a

40. For lined areas, leachate collection and removal systems shall be installed immediately above the liner and shall be designed, constructed, maintained, and operated to collect and remove twice the maximum anticipated daily volume of leachate from the Unit.^a

41. The leachate collection and removal system shall be designed and constructed to prevent the development of hydraulic head on the liner; and convey to a sump, or other appropriate collection area, all leachate which reaches the liner. The depth of fluid in any collection sump shall be kept at the minimum needed to ensure efficient pump operation.^a

Closure

42. Final Landfill configuration shall not exceed the contour elevations delineated in the November, 1990 version of the Site Operations Plan prepared by Emcon for areas northwest of the radio towers. A vertical expansion above 325 feet but not to exceed 340 feet (including final cover), may be allowed only if the Executive Officer is satisfied that the Discharger is in compliance with all requirements of this Order. If the inactive area of the landfill does not have a 5%

slope in place by October 31, 1998 or if final cover has not been placed on the inactive landfill area by December 31, 2003, permission to discharge in the vertical expansion is revoked and the Discharger shall place final cover over areas of the landfill which do not have final cover. Six months after commencing the vertical expansion southeast of the radio towers, the Discharger shall complete final cover in the active area northwest of the radio towers. If the final cover is not completed in this area within six months, Discharger shall cease disposing waste at the landfill and shall place final cover over areas of the landfill which do not have final cover. For the "radio towers" area shown on Attachment 2, final elevation (including final cover) shall not exceed a straight line projection beginning at 325 feet at the northwest boundary to the maximum achieved elevation at the southeast boundary.

43. Areas at final fill elevations (except the inactive area) or areas closed as a result of Discharge Prohibition A.22., maximum 325 feet above mean sea level (including final cover) in the "active" portion (340 feet including final cover) to the southeast of the radio towers with a straight line transition between the two elevations in the area where the radio towers currently stand, shall be covered within six months with final cover pursuant to Section 2581 of Chapter 15 including from bottom to top:^a

I.

- a. at least a two foot foundation layer placed over waste;
- b. compacted clay with an in-place permeability no faster than 1×10^{-6} cm/sec, or no faster than the permeability of underlying natural geologic materials, which ever is less; and
- c. at least one foot of soil capable of supporting vegetation, resisting erosion, and protecting the underlying low permeability layer; or

II.

- a. an Executive Officer approved engineered alternative that offers an in-place permeability of no faster than 1×10^{-6} cm/sec, and

- b. at least one foot of soil capable of supporting vegetation, resisting erosion, and protecting the underlying low permeability layer.

Hydraulic conductivity of a low-permeability soil layer shall be determined by both laboratory and in-place field (e.g., sealed infiltrometer test) testing. Permeability determinations for cover materials shall be as specified in Article 4 of Chapter 15 and shall be appended to the final closure and post-closure maintenance plan. Construction methods and quality assurance procedures shall be submitted for Board review, and shall insure all parts of the low-permeability layer meet the hydraulic conductivity and compaction requirements. Final cover shall be graded to a slope of at least 5%, but not more than 10% unless adequate erosion control measures are implemented and approved by the Executive Officer.

The inactive area northwest of the active area is given an exception to the six month requirement in accordance with Discharge Specification No. 54. The southeast slope of the active area at final grade is exempted until April 9, 1996 to complete final cover to allow six months after the completion of the Seismic Slope Stability Calculation Report Completion.

- 44. All Landfill areas which have not reached final fill elevation, but will remain inactive over one-year, must be provided with an Executive Officer approved long-term intermediate cover. The thickness and permeability of the long-term intermediate cover shall be based primarily on site specific conditions including, but not limited to length of exposure time; volume of underlying material, permeability, thickness and composition of existing cover; amount of yearly rainfall; depth to ground water; beneficial uses of underlying ground water; site specific geologic and hydrogeologic conditions; and effectiveness of existing monitoring system.
- 45. The Discharger shall implement final closure activities as the site operation progresses (e.g., within 30 days after a particular Unit or portion of a Unit reaches final fill elevation (except the inactive area), final closure activities, consistent with the closure schedule, must be initiated cover

must be provided), in accordance with requirements consistent with the closure of the entire site, as approved by the Executive Officer and the CIWMB in accordance with the most recently approved closure plan.^{a,b}

- 46. All closed Landfill WMUs shall be provided with at least two permanent monuments, installed by a licensed land surveyor, from which the location and elevation of all wastes, containment structures, and monitoring facilities can be determined throughout the post-closure maintenance period. Cumulative waste subsidence and settlement of areas where final cover is installed, shall be documented in the annual report.^a
- 47. Partial closure shall be accomplished by implementing closure activities, including but not limited to: placement of final cover, final grading, maintenance, revegetation, and installation of environmental monitoring control systems consistent with the closure of the entire site. Units closed in accordance with a Closure Plan approved by the Executive Officer and the California Integrated Waste Management Board, are not subject to future regulatory changes, unless monitoring data indicate impairment of beneficial uses of ground water.^{a,b}
- 48. Alternative intermediate and final cover designs may be considered for Executive Officer approval, if such designs provide equivalent reduction in infiltration and protection from wind and water erosion.^{a,b}
- 49. Methane and other Landfill gases shall be adequately vented, removed from the Landfill, or otherwise controlled, as required, to prevent nuisance conditions or the impairment of beneficial uses of water due to migration through the vadose (unsaturated) zone.

Reporting

- 50. Discharger shall notify Board staff, within 24 hours by telephone and within seven days in writing, of any noncompliance potentially or actually endangering health or the environment. Any noncompliance which threatens the Landfill's containment integrity shall be promptly corrected. Correction schedules are subject to the approval of the Executive Officer, except when

delays will threaten the environment and/or the Landfill's integrity (i.e., emergency corrective measures). Corrections initiated prior to Executive Officer approval shall be so stated in the written report. The written report shall contain a description of the noncompliance and its cause; the period of noncompliance including exact dates and times or anticipated duration; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance. This provision includes, but is not limited to:

- a. violation of a discharge prohibition;
 - b. violation of any treatment system's discharge limitation;
 - c. slope failure; and
 - d. leachate seep occurring on, or in proximity to, the Landfill.^a
51. Reports of compliance or noncompliance with, or any progress reports on interim and final requirements contained in any compliance schedule, shall be submitted within 14 days following each scheduled date unless otherwise specified within the Order. If reporting noncompliance, the report shall include a description of the reason, a description and schedule of tasks necessary to achieve compliance, and an estimated date for achieving full compliance. A second report shall be submitted within 14 days of achieving full compliance.
 52. Reports shall be submitted in advance of any planned changes in the permitted facility or in an activity which could potentially or actually result in noncompliance.
 53. Within 30 days of a significant loss in waste stream (e.g., 25 percent or more), the Discharger shall notify the Executive Officer in writing.
 54. Discharger shall complete 5% slope of the entire inactive area to the northwest of the active area by October 31, 1998. The Discharger shall complete final capping of the inactive area northwest of the active area by December 31, 2003. Areas described are shown on Attachment 2.

C. WATER QUALITY PROTECTION STANDARDS

1. Water Quality Protection Standard (WQPS or Standard). The five parts of the Water Quality Protection Standard [Standard] are as follows:
 - a. Constituents of Concern. The list of Constituents of Concern for water-bearing media [i.e., ground water, surface water, and soil pore liquid]; and soil pore gas, include those described in Part I.E.5., of the attached MRP NO. 94-63.
 - b. Concentration Limits. For each Monitoring Point assigned to the Detection Monitoring Program [MRP Part II.B], the Concentration Limit for each Constituent of Concern [or Monitoring Parameter] shall be its background value as obtained during that Reporting Period [defined in MRP Part IV.], as described in Part V.H. of the attached MRP No. 94-63.
 - c. Monitoring Points and Background Monitoring Points for Detection Monitoring shall be those listed in MRP Part I.D.3. and shown on MRP Attachment A.
 - d. Point of Compliance. Point of Compliance means a vertical surface located at the hydraulically downgradient limit of the waste management unit that extends through the uppermost aquifer underlying the unit.
 - e. Compliance Period. The Compliance Period is the number of years equal to the active life of the waste management unit (including any waste management unit activity prior to the adoption of the waste discharge requirements) plus the closure period. The Compliance Period is the minimum period of time during which the Discharger shall conduct a water quality monitoring program subsequent to a release. Each time the Standard is broken (i.e., a release is discovered), the Unit begins a Compliance Period on the date the Board directs the Discharger to begin an Evaluation Monitoring Program. If the Discharger's Corrective Action Program (CAP) has not achieved compliance with the Standard by the scheduled end of the Compliance Period, the

Compliance Period is automatically extended until the Unit has been in continuous compliance for at least three consecutive years. The Compliance Period lasts as long as the waste management unit poses a threat to water quality.

2. The Detection Monitoring Parameters for (ground water, surface water, perched zone, or soil-pore liquid) samples; and VOC_{water} , a composite parameter that encompasses a variety of constituents (VOC), include those listed in MRP Part I.E.3.
3. The Detection Monitoring Parameters for soil pore gas samples; and VOC_{spg} , a composite parameter that encompasses a variety of gaseous-phase VOCs include those listed in MRP Part I.E.4.
4. Upon the adoption of this Order, the Discharger shall, install any additional ground water, soil pore liquid, soil pore gas, or leachate monitoring devices required to fulfill the terms of any Discharge Monitoring Program issued by the Executive Officer.
5. Additional Requirements
 - a. The concentrations of indicator parameters or waste constituents in water passing through the "Detection" Points of Compliance shall not exceed the "water quality protection standard(s)" established pursuant to MRP No. 94-63.
 - b. Discharge of waste shall not cause a "statistically significant" increase over background for any of the constituents of concern or monitoring parameters listed in Appendix I and II of Subtitle D.
 - c. Discharge of waste shall not cause a violation of any applicable water quality standard for receiving waters adopted by the Board or the State Water Resources Control Board.

d. Discharge of waste shall not cause concentrations of chemicals and radionuclides in underlying and downgradient ground water to exceed limits set forth in Title 22, Chapter 15, Articles 4 and 5 of the code.

e. Discharge of waste shall not adversely impact the quality of water in any aquifer.

f. Discharge of waste shall not cause ground water in downgradient wells to exceed the State Department of Health Services latest recommended Drinking Water Action Levels or Maximum Contaminant Levels.

D. PROVISIONS

General Provisions

1. Order No. 90-38 "Waste Discharge Requirements for City of Santa Maria Landfill, adopted by the Board on May 11, 1990, is hereby rescinded.
2. The Discharger shall comply with "Monitoring and Reporting Program No. 94-63", as specified by the Executive Officer.
3. The Discharger shall maintain a copy of this Order at the facility and make it available at all times to regulatory agency personnel and to facility operating personnel, who shall be familiar with its contents.
4. The Discharger shall comply with all other applicable provisions of Chapter 15, and Subtitle D that are not specifically referred to in this Order. If any applicable regulation requirements overlap or conflict in any manner, the most restrictive requirement shall govern in all cases, unless specifically stated otherwise in this Order, or as directed by the Executive Officer.

5. The Discharger shall maintain legible records of the volume and type of each waste discharged at each Unit and the manner and location of discharge. Such records shall be maintained at the facility until the beginning of the post-closure maintenance period. These records shall be available for review by representatives of the Board and of the State Water Resources Control Board at any time during normal business hours. At the beginning of the post-closure maintenance period, copies of these records shall be sent to the Board.^a
6. The Discharger shall be responsible for accurate waste characterization, including determinations of whether or not wastes will be compatible with containment features or other wastes and whether or not wastes are required to be managed as hazardous wastes.^a
7. A list of the general types of the more widely used names of hazardous-type wastes prohibited at this site shall be posted on a legible roadway sign at the entrance in both English and Spanish. The sign shall also state the locations of the nearest hazardous waste disposal sites and shall list penalties for illegal dumping. A specific list of Hazardous Wastes and other types of materials prohibited at the Landfill shall be provided to commercial waste haulers and shall be available to all other site users upon request.
8. The Board considers the property owner and Discharger to have a continuing responsibility for correcting any problems which may arise in the future as a result of this waste discharge.
9. The landowner and the Discharger shall have a continuing responsibility to assure protection of usable waters, from discharged wastes and from gases and leachate generated by discharged waste, during the Landfills active life, closure, and post-closure maintenance periods and during subsequent use of the property for other purposes.
10. The Discharger or persons employed by the Discharger shall comply with all notice and reporting requirements of the State Department of Water Resources with regard to the construction, alteration, destruction, or abandonment of all monitoring wells used for compliance with this Order or with MRP No. 94-63, as required by Sections 13750 through 13755 of the California Water Code.^e
11. The Discharger shall notify the Board in writing of any proposed change in ownership or responsibility for construction or operation of the facility. This notification shall be given at least 90 days prior to the effective date of the change and shall be accompanied by an amended Report of Waste Discharge and any technical documents that are needed to demonstrate continued compliance with this Order. In the event of any change in ownership of this waste management facility, the Discharger shall notify the succeeding owner or operator, in writing, of the existence of this Order. A copy of that notification shall be sent to the Board. Notification to the Board shall also comply with Section 2590(c) of Chapter 15.^a
12. To assume operation under this Order, the succeeding owner or operator must apply in writing to the Executive Officer requesting transfer of the Order. The request must contain the requesting entity's full legal name, the state of incorporation if a corporation, the name and address and telephone number of the persons responsible for contact with the Board, and a statement indicating that the new owner or operator assumes full responsibility for compliance with this Order. Failure to submit the request shall be considered a violation of Section 13264 of the Water Code (discharge without waste discharge requirements). Transfer shall be approved or disapproved in writing by the Executive Officer.^e

13. Within 60 days after completing final closure of all MSW landfill Units,
 - a. the owner or operator must record a notation on the deed to the Landfill facility property, or some other instrument that is normally examined during title search, and notify the Executive Officer that the notation has been recorded and a copy has been placed in the operating record.
 - b. the notation on the deed must in perpetuity notify any potential purchaser of the property that:
 - i. the land has been used as a landfill facility; and
 - ii. its use is restricted pursuant to Subtitle D, section 258.61(c)(3).
 - c. Pursuant to Chapter 15, should the Discharger default in post-closure care, liability shifts to the new owner/operator.^{a,c}
14. The Discharger shall submit to the Board and the California Integrated Waste Management Board for approval an updated closure and post-closure maintenance plan (Final Closure Plan) by December 31, 1997. The Final Closure Plan shall describe the methods and controls to be used to assure protection of the quality of surface and ground waters of the area during partial and final closure operations and during any proposed subsequent use of the land. The Final Closure Plan must include:
 - a. a description of the final cover, designed in accordance with all applicable State and Federal regulations and the methods and procedures to be used to install the cover;
 - b. an estimate of the largest area of the Landfill Unit ever requiring a final cover at any time during the active life;
 - c. an estimate of the maximum inventory of wastes ever on-site over the active life of the Landfill facility;

- d. a schedule for completing all activities necessary to satisfy all closure criteria as required by Chapter 15, and Subtitle D regulations;
- e. an estimate of closure and post closure maintenance costs;
- f. a proposal for a trust fund or equivalent financial arrangement to provide sufficient funding for closure and post-closure maintenance; and
- g. the amount to be deposited in the trust fund or equivalent financial arrangement each year.

The Final Closure Plan shall be prepared by or under the supervision of a California Registered Civil Engineer or Certified Engineering Geologist. Updates of the plan are required whenever substantial changes occur or yearly. The method, identified for each Units' closure and protection of the quality of surface and ground waters, shall comply with waste discharge requirements established by the Board. The Final Closure Plan report shall be consistent with all applicable State and Federal regulations, including Chapter 15, and Subtitle D.^{a,c}

15. The Discharger shall notify the Board at least 180 days prior to beginning any partial or final landfill closure activities. The notice shall include a statement that all closure activities will conform to the most recently approved Final Closure Plan and that the Plan provides for closure in compliance with all applicable State and Federal regulations. If there is no approved Final Closure Plan, the Discharger shall submit a complete Final Closure Plan at least 90 days prior to beginning any Landfill closure activities.^a
16. The Executive Officer may require partial and/or final closure of any WMU regardless of whether such WMU has reached final capacity laterally and/or vertically for the protection of water quality. This order requires "rolling closure" as the final contours are reached or sooner if an alternative to landfilling at this site can be found.

17. The Discharger shall report all changes in usage of daily cover and performance standards within 10 days following the change.
18. The Discharger shall maintain waste containment facilities and precipitation and drainage controls, and shall continue to monitor, as appropriate, ground water, leachate from the Unit, the vadose zone, and surface waters per the current version of the MRP throughout the post-closure maintenance period.^a
19. The post-closure maintenance period shall continue until the Board determines that remaining wastes in the Landfill will not threaten water quality.^a
20. Discharger shall immediately notify the Board of any flooding, equipment failure, slope failure, or other change in site conditions which could impair the integrity of waste containment facilities or of precipitation and drainage control structures.
21. At any time, the Discharger may file a written request (including appropriate supporting documents) with the Executive Officer, proposing appropriate modifications to the MRP. The request may address changes (a) to any statistical method, non-statistical method, or retest method used with a given constituent or parameter, (b) to the manner of determining the background value for a constituent or parameter, (c) to the method for displaying annual data plots, (d) to the laboratory analytical method used to test for a given constituent or parameter, (e) to the media being monitored [e.g., the addition of soil pore gas to the media being monitored], (f) to the number or placement of Monitoring Points or Background Monitoring Points for a given monitored medium, or (g) to any aspect of monitoring or QA/QC. After receiving and analyzing such a report, the Executive officer either shall reject the proposal for reasons listed, or shall incorporate it, along with any necessary changes, into the MRP. The Discharger shall implement any changes proposed by the Executive Officer upon receipt of a revised MRP.
22. The Discharger shall submit a complete liner system design report for Executive Officer consideration of any new WMU use and construction, at least 180 days prior to WMU development. The design report shall adequately address any proposed deviation from the most currently approved fill sequencing plan. It must adequately address all applicable requirements of State (Chapter 15) and Federal (Subtitle D) landfill regulations.^a
23. Vertical expansions (i.e., additional refuse placement on top of existing unlined WMUs already containing refuse) above final fill elevations specified by this Order will not be considered.
24. Pursuant to the California Code of Regulations, Title 23, Chapter 15, Article 9, the Discharger shall submit a technical report to the Executive Officer not later than March 9, 1999 which:
 - a. discusses whether there has been or will be changes in the continuity, character, location, or volume of the discharge;
 - b. discusses any proposed expansions (lateral and/or vertical expansions within and/or outside currently permitted Landfill boundaries) or closure plans, including detailed information of the quality and quantity of waste discharged and the anticipated impact upon water quality and Landfill operations;
 - c. discusses whether, in their opinion, there is any portion of the Order that is incorrect, obsolete, or otherwise in need of revision;
 - d. addresses all other applicable sections of Article 9, Chapter 15 (e.g., update of the Landfill's Development and Operations Plan, etc.); and
 - e. includes any other technical documents needed to demonstrate continued compliance with this Order and all pertinent state and federal requirements.

25. Prior to April 15, 1995, the Discharger shall submit a technical report addressing compliance with all terms of this Order. The report shall include an implementation schedule for all work required by this Order.
26. Except for data determined to be confidential under Section 13267 (b) of the California Water Code, all reports prepared in accordance with this Order shall be available for public inspection at the office of the Board.^d
27. All reports shall be signed as follows:
 - a. for a corporation-by a principal executive officer of at least the level of vice president*;
 - b. for a partnership or sole proprietorship-by a general partner or the proprietor*, respectively;
 - c. for a public agency-by either a principal executive officer or ranking elected official* and,
 - d. engineering reports; by a California Registered Civil Engineer or Certified Engineering Geologist.

* or their "duly authorized representative."

28. Any person signing a report makes the following certification, whether it is expressed or implied:

"I certify under penalty of perjury I have personally examined and am familiar with the information submitted in this document and all attachments and, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe the information is true, accurate, and complete. I am aware there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

29. The Discharger shall submit to the Executive Officer for review and approval a periodic load-checking program. The load checking program shall be adequately designed to ensure that "hazardous wastes" and "unauthorized designated wastes" are not discharged to the WMU. The load checking program shall be submitted by

April 15, 1995. The program shall include, but not be limited to:^a

- a. number of random loads to be checked per month and/or year;
 - b. training program for on-site personnel;
 - c. record keeping and reporting program;
 - d. program implementation schedule;
 - e. alternatives for waste found to not be in compliance with these waste discharge requirements; and
 - f. example of signs posted at the facility.
30. The Board will review this Order periodically and will revise these requirements when necessary.
 31. The Discharger shall submit an updated/revised version of its Master Plan by April 15, 1995. The Master Plan must include detailed information regarding regulatory considerations; design, construction and operating provisions; environmental monitoring; and closure and postclosure. Additionally, the Master Plan shall:^a
 - a. include a Fill Sequencing Plan, including detailed maps. The Fill Sequencing Plan should describe in detail the overall development of the entire Landfill.
 - b. include a detailed description of the lateral and vertical extent of refuse within all existing Modules. It must include an accurate estimate of waste volumes within each existing Landfill module and an approximation of the remaining volume and years of capacity for each existing module and all new proposed modules within currently permitted Landfill boundaries. It must also describe all existing available space within currently permitted Landfill areas (i.e., modules where refuse has been placed in the past, but have not reached final permitted elevation and modules or portions of modules where refuse has never been placed).

- c. discuss any plans/proposals to close or partially close any modules or portions of modules, any proposed liner systems and respective design components, any proposed plans for long-term intermediate cover for Landfill areas which may remain inactive for long periods of time.
32. The Discharger shall develop a long-term intermediate cover design for all Landfill areas which have not reached final fill elevation, but will remain inactive for over one year. Cover designs shall minimize percolation from precipitation and surface water flows. The proposed design shall be submitted by April 15, 1995, for Executive Officer approval. Executive Officer approval of the design will be based on site specific factors as described in Discharge Specification B.54.
33. The Discharger shall submit a 'Wet Weather Preparedness Report' by November 1, of each year. The report shall address, in detail, compliance with all wet weather preparedness related specifications (e.g., Discharge Specifications B.23 through B.33) of this Order, and all other relevant Chapter 15, and Subtitle D criteria.
34. If the Discharger or the Board determines, pursuant to Section 2550.8(g) or (i), that there is evidence of a new release from any portion of the Landfill, the Discharger shall immediately implement the procedures outlined in M&RP, Part II.B
35. The Discharger shall submit a 'Ground Water Intrusion Prevention Plan' by April 15, 1995. The Plan shall include, but is not limited to, design and implementation of the necessary means to prevent ground water intrusion, as well as corrective action in the case of failure to prevent ground water intrusion. The Ground Water Intrusion Prevention Plan will be implemented upon Executive Officer approval.
36. The Discharger shall submit a 'Landfill Gas Extraction Report' by April 15, 1995. The Report shall address, in detail, compliance with the California Code of Regulations, Title 23, and Discharge Specification B.56 of this Order.
37. The Discharger shall submit an "Evaluation Monitoring Completion Report" by April 15, 1995. The Report will initiate the end of Evaluation Monitoring and delineate appropriate monitoring procedures to ensure water quality on and around the site until a time that the Board finds fit. The evaluation monitoring shall fully define the lateral and vertical extent of contamination and constituents of contamination in the upper aquifer.
38. The Discharger shall submit a "Plume Migration Detection Plan" by January 15, 1995. The Plan shall address, but is not limited to, monitoring procedures necessary to detect, evaluate, correct, and prevent plume movement and migration as related to Discharge Specification B.3 of this Order. The plan will also include evaluation monitoring of a potential plume in the deeper aquifer below the clay zone at approximately 100 feet depth.
39. The Discharger shall submit an "Intermediate Closure and Post-Closure Maintenance Plan" by April 15, 1995. The Intermediate Closure and Post-Closure Maintenance Plan will include a phased closure of the Landfill upon Executive Officer approval of the Plan. The Plan will comply with the Closure Discharge Specifications, including Discharge Specification B.43 of this Order.
40. The Discharger shall submit a complete "Monitoring and Reporting Program Proposal" by January 15, 1995, in accordance with the California Code of Regulations Title 23, Chapter 15, Article 5, and Discharge Specification B.1. The Proposal shall address, but is not limited to, detection monitoring, evaluation monitoring, and corrective action for surface water, vadose zone, and ground water in and around the site.
41. The Discharger may combine the required plans and reports into a "Revised Report of Waste Discharge for Final Closure." All reports and plans shall be complete in meeting their own individual requirements and combined in a comprehensive fashion. The comprehensive report is due April 15, 1995.

42. Implement an Executive officer approved plume migration detection plan by June 15, 1995.
 43. Implement an Executive Officer approved MRP by April 15, 1995.
 44. The City of Santa Maria (i.e., by adoption of a Resolution) shall appropriate \$2,700,000 to a restricted reserve in a Financial Assurance Instrument (Instrument) to cover the estimated Article 5 costs to initiate and complete corrective action for a reasonably foreseeable release. The total appropriated amount is provided in the "Financial Assurance for Possible Corrective Action" section which is presented in the support document for the June 26, 1992 Revised Report of Waste Discharge. The total costs include: corrective action program costs; evaluation monitoring program costs; and annual testing, operation and maintenance costs. The Discharger shall submit a report yearly that either validates the Instrument's ongoing viability or proposes and substantiates any needed changes.^{a,c}
- REPORT DUE DATES: The report is due April 15, 1995, and every five years thereafter.
45. By April 15, 1995, the Discharger shall submit a signed original Financial Assurance Instrument for corrective actions as outlined in Provision D.44, above, for Executive Officer review and approval.
 46. Any person failing or refusing to furnish technical or monitoring program reports as required by subdivision (b) of section 13267 of the California Water Code, or falsifying any information provided therein, is guilty of a misdemeanor.^d
 47. The Discharger and/or any person who violates a waste discharge requirement and/or who intentionally or negligently discharges waste, causes or permits waste to be deposited where it is discharged to waters of the state, may be liable for civil and/or criminal remedies, as appropriate, pursuant to the California Water Code.^d
 48. Discharger shall submit Final Cover Design for the inactive area northwest of the active area by January 15, 1995.
 49. Discharger shall submit a proposed plan by April 15, 1995 to minimize river recharge percolation through wastes.
 50. Discharger shall implement a plan to minimize river percolation through wastes by April 15, 1996.
 51. A "landfill seismic slope stability report" shall be submitted to the Executive Officer by October 9, 1995.
 52. A detailed Financial Statement shall be submitted within 30 days of issuance of this order and yearly thereafter within 30 days of the City adopting its annual budget. The statement shall show all the income from the landfill and all activities/funds, etc. where the income is going.

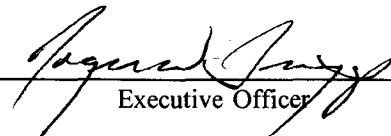
53. The Discharger shall comply with the following submittal and implementation schedule for all tasks and/or reports required by this order:

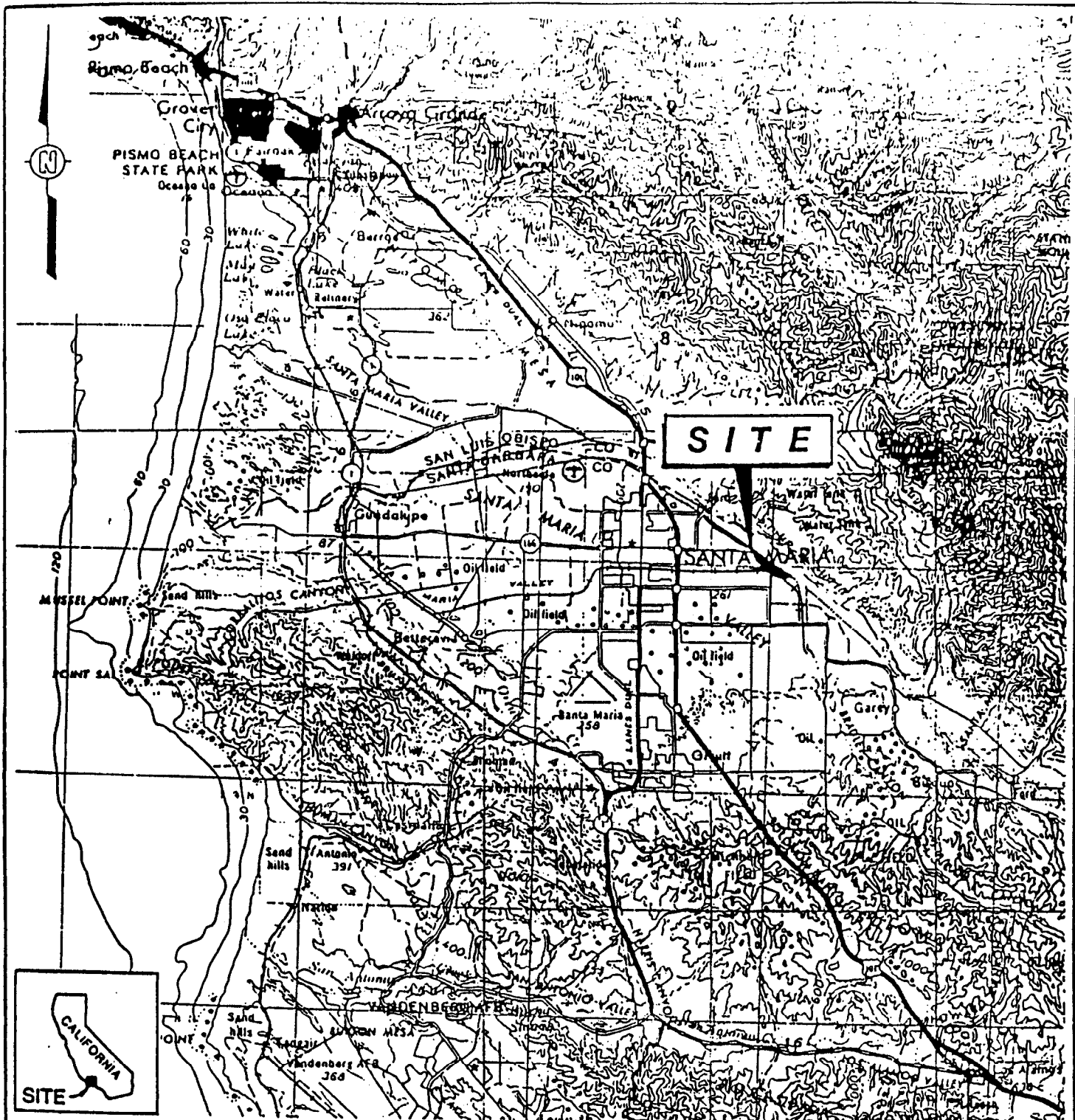
REPORT AND IMPLEMENTATION DATE SUMMARY

TASK	IMPLEMENTATION DATE
Runoff diversion and erosion prevention [Specification No. 21]	October 1, of each year
Minimum One foot cover over entire active WMU [Specification No. 30]	October 1, of each year
Vegetation placement over entire Landfill area [Specification No. 31]	October 1, of each year
Wet Weather Preparedness Report [Provision No. 25]	November 1, of each year
Technical Compliance Report [Provision No. 29]	April 15, 1995
Load Checking Program [Provisions 24]	April 15, 1995
Financial Assurance Agreement Documents [Provision No. 44 & 45]	April 15, 1995
Liquid Mass Balance Report [Specification No. 32]	April 15, 1995
Long-Term Intermediate Cover Design Report [Provision No. 32]	April 15, 1995
Updated Closure Plan [Provision No. 14]	yearly updates due January 30
Updated Master Plan [Provision No. 31]	April 15, 1995
Technical Report [Provision No. 24]	March 9, 1994
Slope Stability Calculations Report [Provision No. 51]	October 9, 1995
Landfill Surface Slope Report [Specification No. 37]	November 10, 1998
Final Closure Plan [Provision No. 14]	December 31, 1997
Ground water Intrusion Prevention Plan [Provision No. 35]	April 15, 1995
Landfill Gas Extraction and Treatment Plan [Provision No. 36]	April 15, 1995
Evaluation Monitoring Completion Report [Provision No. 37]	April 15, 1995

Plume Detection Plan [Provision No. 37]	April 15, 1995
Intermediate Closure and Post Closure Maintenance Plan [Provision No. 39]	April 15, 1995
Monitoring and Reporting Program Proposal [Provision No. 40]	January 15, 1995
Implement Plume Migration Detection Plan [Provision No. 42]	June 15, 1995
Implement Adequate Monitoring and Reporting Program [Provision No. 43]	April 15, 1995
Vertical Expansion Request Letter [Provision No. 48]	November 18, 1994
Submit Final Cover design for Inactive Area [Provision No. 50]	January 15, 1995
River recharge percolation through waste minimization plan [Provision No. 49]	April 15, 1995
Implement river recharge percolation through waste minimization plan [Provision No. 50]	April 15, 1996
Complete construction of 5% slope of entire inactive area [Discharge Specification No. 54]	October 30, 1998
Complete inactive area final cover [Discharge Specification No. 54]	December 31, 2003
Complete final cover on southeast slope of active area at final grade [Discharge Specification No. 43]	April 9, 1996
Financial Statement report [Provision No. 52]	December 18, 1994 and 30 days after annual City budget adoption

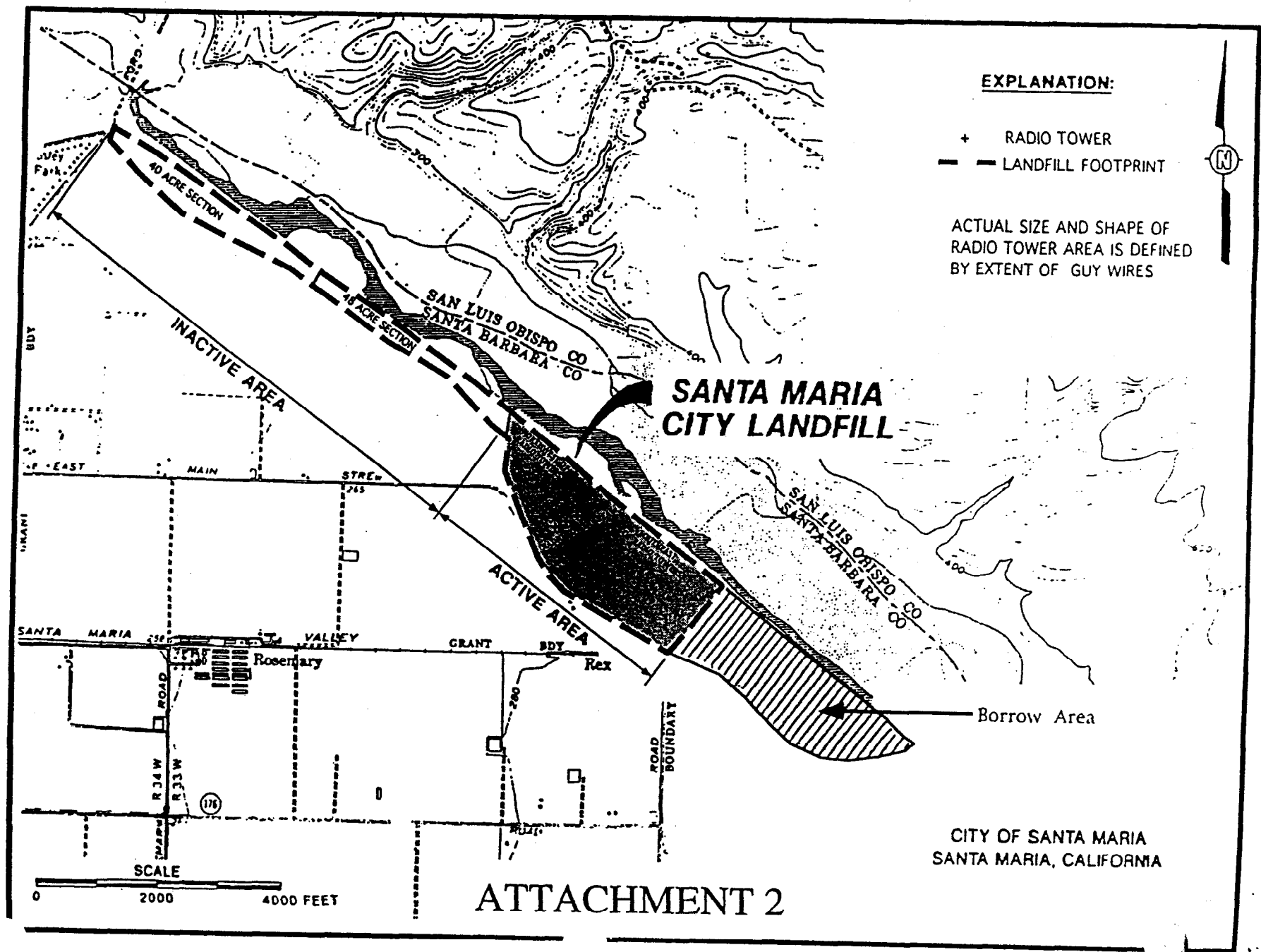
I, ROGER W. BRIGGS, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Coast Region, on November 18, 1994.


Executive Officer



ATTACHMENT "1"

SITE LOCATION MAP



**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL COAST REGION
81 Higuera Street, Suite 200
San Luis Obispo, California 93401-5427**

**MONITORING AND REPORTING PROGRAM NO. 94-63
(INTERIM)**

FOR

**CITY OF SANTA MARIA
CLASS III LANDFILL**

TABLE OF CONTENTS

PART I: MONITORING AND OBSERVATION SCHEDULE

- A. SITE INSPECTIONS
- B. INTAKE MONITORING
- C. LEACHATE AND GAS COLLECTION SYSTEMS INSPECTIONS
- D. RAINFALL DATA
- E. WATER MONITORING

PART II: SAMPLE COLLECTION AND ANALYSIS

- A. SAMPLING AND ANALYTICAL METHODS
- B. CONCENTRATION LIMITS
- C. INITIAL BACKGROUND DETERMINATION
- D. RECORDS TO BE MAINTAINED

PART III: STATISTICAL AND NON-STATISTICAL ANALYSIS OF DATA

- A. METHOD DETERMINATION
- B. STATISTICAL METHODS
- C. NON-STATISTICAL METHODS
- D. DISCRETE RETEST

PART IV: REPORTING

- A. GENERAL
- B. ANNUAL SUMMARY REPORT
- C. CONTINGENCY RESPONSE
- D. RESPONSE TO VOC DETECTION IN BACKGROUND

TABLE OF CONTENTS (CONTINUED)

PART V: DEFINITION OF TERMS

- A. AFFECTED PERSONS**
- B. CONSTITUENTS OF CONCERN (COC)**
- C. FACILITY-SPECIFIC METHOD DETECTION LIMIT (METHOD
DETECTION LIMIT)**
- D. FACILITY-SPECIFIC PRACTICAL QUANTITATION LIMIT (PRACTICAL
QUANTITATION LIMIT)**
- E. MATRIX EFFECT**
- F. MONITORED MEDIA**
- G. MONITORING PARAMETERS**
- H. MONITORING PERIOD**
- I. STANDARD OBSERVATIONS**
- J. RECEIVING WATERS**
- K. VOLATILE ORGANIC COMPOSITE MONITORING PARAMETER FOR
WATER**

PART I: MONITORING AND OBSERVATION SCHEDULE

Unless otherwise indicated all required monitoring and observations shall be reported in the Detection Monitoring Report and/or the Annual Summary Report, as outlined in Part IV of this Monitoring and Reporting Program .

A. SITE INSPECTIONS

The Discharger shall inspect the Landfill, in accordance with the following schedule, recording, at a minimum, the Standard Observations as defined in Part V.

Site Inspection Schedule:

1. [during the wet season (October through April), following each storm which produces storm water discharge, with inspections performed at least monthly]
2. [during the dry season a minimum one inspection each Monitoring Period]

B. INTAKE MONITORING

The Discharger shall maintain a daily record of the waste stream. The record shall include the following:

1. weight and volume of waste received;
2. running totals of volume received, volume remaining for waste placement, and site life expectancy;
3. current fill area;
4. waste type and diversion quantities; and
5. log of random load checking program. The log shall contain a record of refused loads, including the type of waste refused, and the date, name, address , and phone number of the party attempting to dispose of the waste.

C. LEACHATE OR GAS COLLECTION AND DRAINAGE SYSTEMS INSPECTIONS

The Discharger shall inspect all leachate systems and record the following information:

1. Weekly; leachate containment system integrity, record volume of leachate collected and disposal method used;
2. Quarterly; pumping system operational check;
3. Annually; leachate collection and removal system testing as required by Chapter 15, Article 4, §2543(d), reporting the results as part of the Annual Summary Report required by Part IV.B. of this Monitoring and Reporting Program. During the annual inspection, particular attention shall be given to identifying evidence of biofouling. The absence or presence of biofouling shall be addressed in the inspection report.

Additionally the Discharger shall inspect all drainage control systems following each storm and record the following information:

1. whether storm storage basins and drainage ditches contain liquids and how and when the liquids will be removed;
2. any apparent seepage from storage basins;
3. general conditions of facilities and liners; and
4. steps taken to correct any problems found during inspection and when taken.

D. RAINFALL DATA

The Discharger shall record the following information;

1. total precipitation during the Monitoring Period.
2. precipitation during the most intense twenty-four hour interval of the Monitoring Period.
3. return rating of most intense storm [25 year, 100 year, and so on].

E. WATER MONITORING

The Discharger shall monitor water bearing media in accordance with the following schedule. Sampling, analyses, and reporting shall follow Parts II, III, and IV of this Monitoring and Reporting Program. The Discharger shall insure enough samples are taken, at each monitoring point, to qualify for the most appropriate statistical analysis method outlined under Part III of this Monitoring and Reporting Program.

1. Monitoring Points and Background Monitoring Points

The Discharger shall sample the following Monitoring Points and Background Monitoring Points, as shown on Attachment "A" to this Monitoring and Reporting Program:

- a. eight ground water monitoring wells currently exist at the landfill (MW-1R, MW-2R, MW-3R, MW-4R, MW-5R, MW-7R, MW-8R, and MW-11R). Evaluation Monitoring occurs at wells EW1a, EW1b, EW1c, and EW1d. For background monitoring, well MW-9 will be used.
- b. for surface waters the Monitoring Points are located at stations SW-1 and SW-2 where surface water leaves the Landfill boundary and discharges into the Santa Maria River. The Background Monitoring Points for surface water shall be upstream from the landfill in the Santa Maria River and in tributaries on the south side of the Santa Maria River southeast of the Landfill.
- c. unsaturated zone monitoring is required unless demonstrated by representative soil suction curves that showing soil pore liquid cannot be extracted, in which case monitoring of unsaturated zone gas is required.
- d. twenty soil gas monitoring probes are G-1 through G-20 with a point of compliance which surrounds the entire Landfill.

- e. water depth will be monitored monthly by piezometers SP-1, SP-2, SP-3, SP-4 as well as DP-1 and DP-2 and at all the detection, evaluation, and corrective active effectiveness monitoring wells prior to purging for chemistry sampling. Monthly water table data shall be included in tabular form and as contour maps in quarterly monitoring reports.

2. Monitoring Frequency

Beginning November 18, 1994, monitoring of each monitored medium, all Monitoring Points and all Background Monitoring Points (if used), shall be carried out once each Monitoring Period. The Monitoring Period for Monitoring Parameters is quarterly. The Monitoring Period for Constituents of Concern is for all monitoring wells once every five years each time a new release is discovered (whichever is sooner).

3. Monitoring Parameters

A. Ground, surface and vadose zone waters

The Discharger shall analyze all samples from all Monitoring Points for the following Monitoring parameters:

Volatile Organic Compound (8260)
 pH
 Total Dissolved Solids (TDS)
 Chloride
 Sulfate
 Nitrate (Nitrogen)
 Electric Conductivity
 Selenium
 Iron
 Manganese
 Total Organic Carbon (TOC)
 Total Petroleum Hydrocarbon (8015 using gas line standard)
 Total Halogenated Compounds (TOX)
 Dissolved Oxygen

Statistical and non-statistical assessment methods, as required by Part III, shall be used to evaluate the sampling results.

B. Soil Pore Gas monitoring

The dischargers shall analyze all gas and unsaturated zone gas and monitoring location for the following monitoring parameters:

VOC
Methane
H₂S

4. Ground Water Flow Rate and Direction

For each monitored ground water body, the Discharger shall measure the water level in each well and piezometer, at least monthly, including the times of expected highest and lowest elevations of the water level, and determine the presence of vertical gradients, and ground water flow rate and direction for the respective ground water body. Ground water elevations for all wells in a given ground water body shall be measured within a period of time short enough to avoid temporal variations in ground water flow which could preclude accurate determination of ground water flow rate and direction (40 CFR §258.53(d)). The Discharger shall compare observed ground water characteristics with those from previous determinations, noting the appearance of any trends and of any indications that a change in the hydrogeologic conditions beneath the site has occurred. This information shall be reported in the Detection Monitoring Report required under Part IV.A. of this Monitoring and Reporting Program.

5. Constituents of Concern

All COCs are included in Appendix II to 40 CFR, Part 258. Monitoring for Constituents of Concern (COC) shall encompass all listed Constituents of Concern and all Monitoring Parameters.

6. Thirty-Day Sample Procurement Limitation

For any given monitored medium, the samples taken from all Monitoring Points and Background Monitoring Points to satisfy the data analysis requirements for a given Monitoring Period shall all be taken within a span not exceeding 30 days, and shall be taken in a manner that insures sample independence to the greatest extent feasible [§2550.7(e)(12)(B) of Article 5].

PART II: SAMPLE COLLECTION AND ANALYSIS

A. SAMPLING AND ANALYTICAL METHODS

Sample collection, storage, and analysis shall be performed according to the most recent version of Standard USEPA Methods (US EPA publication "SW-846"), and in accordance with an approved sampling and analysis plan. Water and waste analysis shall be performed by a laboratory approved for these analyses by the State of California. Specific methods of analysis must be identified. If methods other than USEPA-approved methods or Standard Methods are used, the exact methodology must be submitted for review and must be approved by the Executive Officer prior to use. The director of the laboratory whose name appears on the certification shall supervise all analytical work in his/her laboratory and shall sign all reports of such work submitted to the Board. All monitoring instruments and equipment shall be properly calibrated and maintained to ensure accuracy of measurements. In addition, the Discharger is responsible for seeing that the laboratory analysis of all samples from Monitoring Points and Background Monitoring Points meets the following restrictions:

1. The methods of analysis and the detection limits used must be appropriate for the expected concentrations. For detection monitoring of any constituent or parameter found in concentrations which produce more than 90% non-numerical determinations (i.e., Trace) in historical data for that medium, the analytical method having the lowest Facility-Specific Method Detection Limit (Method Detection Limit) shall be selected from among those methods which would provide valid results in light of any Matrix Effects involved.
2. Trace results (results falling between the Method Detection Limit and the Facility-Specific Practical Quantitation Limit (PQL)) shall be reported as such, and shall be accompanied by both the estimated Method Detection Limit and Practical Quantitation Limit values for that analytical run.
3. Method Detection Limits and Practical Quantitation Limits shall be derived by the laboratory for each analytical procedure, according to State of California laboratory accreditation procedures. Both limits shall reflect the detection and quantitation capabilities of the specific analytical procedure and equipment used by the lab, rather than simply being quoted from US EPA analytical method manuals. If the lab suspects that, due to a change in matrix or other effects, the true detection limit or quantitation limit for a particular analytical run differs significantly from the laboratory-derived Method Detection Limit/Practical Quantitation Limit values, the results shall be flagged accordingly, and an estimate of the detection limit and/or quantitation limit actually achieved shall be included.
4. All QA/QC data shall be reported along with the sample results to which it applies. Sample results shall be reported unadjusted for blank results or spike recovery. The QA/QC data submittal shall include:
 - the method, equipment, and analytical detection limits;
 - the recovery rates, an explanation for any recovery rate that is less than 80%;
 - the results of equipment and method blanks;
 - the results of spiked and surrogate samples;
 - the frequency of quality control analysis; and
 - the name and qualifications of the person(s) performing the analyses.
5. Upon receiving written approval from the Executive Officer, an alternative statistical or non-statistical procedure can be used for determining the significance of analytical results for a constituent that is a common laboratory contaminant (i.e., methylene chloride, acetone, diethylhexyl phthalate, and di-n-octyl phthalate) during any given Monitoring Period in which QA/QC samples show evidence of laboratory contamination for that constituent. Nevertheless, analytical

results involving detection of these analytes in any background or downgradient sample shall be reported and flagged for easy reference by Board Staff.

6. Unknown chromatographic peaks shall be reported, along with an estimate of the concentration of the unknown analyte. When unknown peaks are encountered, second column or second method confirmation and reverse library search procedures shall be performed to attempt to identify and more accurately quantify the unknown analyte.
7. In cases where contaminants are detected in QA/QC samples (i.e., field, trip, or lab blanks), the accompanying sample results shall be appropriately flagged.
8. The Method Detection Limit shall always be calculated such that it represents a concentration associated with a 99% reliability of a non-zero result.

B. CONCENTRATION LIMITS

The concentration limit for any given Constituent of Concern or Monitoring Parameter in a given monitored medium shall be the constituent's background value, established from the Background Monitoring Points for that monitored medium. The background value shall be either:

1. the mean (or median, as appropriate) and standard deviation (or other measure of central tendency, as appropriate) of the constituent's background data; or
2. the constituent's Method Detection Limit, in cases where the constituent's Method Detection Limit is exceeded in less than 10% of the historical samples.

C. INITIAL BACKGROUND DETERMINATION

For the purpose of establishing an initial pool of background data for each Constituent of Concern and each Monitoring Parameter at each Background Monitoring Point in each monitored medium the Discharger shall:

1. Collect at least one sample quarterly for at least one year from each Background Monitoring Point in each monitored medium and analyze for all newly-added Constituent(s) of Concern and Monitoring Parameter(s), including any added by the adoption of this Order; and
2. Sample new Background Monitoring Points, including any added by this Order, at least quarterly for at least one year, analyzing for all Constituents of Concern and Monitoring Parameters.

Once this reference set of background data is collected, the Discharger shall include it as a separate identified item in the ensuing monitoring report submittal.

D. RECORDS TO BE MAINTAINED

Written records shall be maintained by the Discharger or laboratory, and shall be retained for a minimum of five years. This period of retention shall be extended during the course of any unresolved litigation regarding this discharge or when requested by the Board. Such records shall show the following for each sample:

1. Identity of sample and of the Monitoring Point or Background Monitoring Point from which it was taken, the condition of the well, surface casing and surface seal, along with the identity of the individual who obtained the sample;

2. Date and time of sampling including a record of stabilization of field parameters before sampling, turbidity of the sample and report evidence of odors;
3. Date and time that analyses were started and completed, and the name of the personnel performing each analysis;
4. Complete procedure used, including method of preserving the sample, and the identity and volumes of reagents used;
5. Calculation of results; and
6. Results of analyses, and the Method Detection Limit and Practical Quantitation Limit for each analysis.

PART III: STATISTICAL AND NON-STATISTICAL ANALYSIS OF DATA

A. METHOD DETERMINATION

The following data analysis methods shall be used unless and until the Discharger proposes, and the Board revises this Monitoring and Reporting Program to include, data analysis methods that comply with the July 1, 1991 revision of Article 5 of Chapter 15.

The Discharger subject to this section shall use the most appropriate of the following methods [to compare the downgradient concentration of each monitored constituent (or parameter) with its respective background concentration] to determine if there has been a release from the Unit. For any given data set, the Discharger shall first decide if statistical analysis is possible, by reference to the relative frequency with which the constituent is detected in [historical] [background] samples. For a constituent that qualifies for statistical analysis, the Discharger shall proceed sequentially down the list of statistical analysis methods listed, using the first method for which the data qualifies. Those constituents for which no statistical method is appropriate shall be analyzed by the non-statistical method. If the initial analysis tentatively indicates the detection of a release, the Discharger shall implement the appropriate retest procedure in Part III.D. of this Monitoring and Reporting Program.

B. STATISTICAL METHODS

The Discharger shall use one of the following statistical methods to analyze Constituents of Concern or Monitoring Parameters which exhibit concentrations which equal or exceed their respective Method Detection Limit in at least ten percent of the historical background samples. Except for pH, which uses a two-tailed approach, the statistical analysis for all constituents and parameters shall be one-tailed (testing only for statistically significant increase relative to background). Each of these statistical methods is more fully described in the USEPA Interim Final Guidance Document entitled Statistical Analysis of Groundwater Monitoring Data at RCRA

Facilities, dated April 1989, which is hereby incorporated by reference:

1. One-Way Parametric Analysis of Variance (ANOVA), followed by multiple comparisons [§2550.7 (e)(8)(A) of Article 5]

This method requires at least four independent samples from each Monitoring Point and Background Monitoring Point during each sampling episode. The method shall be used for constituents which are historically detected in background at least 85% of the time. Prior to analysis, replace all Trace determinations with a value halfway between the Practical Quantitation Limit and the Method Detection Limit values reported for that sample run, and replace all non-detect determinations with a value equal to half the Method Detection Limit value reported for that sample run. The ANOVA shall be carried out at the 95% confidence level. Following the ANOVA, the data from each downgradient Monitoring Point shall be tested at a 99% confidence level against the pooled background data. If these multiple comparisons cause the Null Hypothesis to be rejected at any Monitoring Point, the Discharger shall conclude that a release is tentatively indicated for that constituent and shall immediately implement the retest procedure under Part III.D. of this Monitoring and Reporting Program;

2. One-Way Non-Parametric ANOVA (Kruskal-Wallis Test), followed by multiple comparisons

This method requires at least nine independent samples from each Monitoring Point and Background Monitoring Point; therefore, the Discharger shall anticipate the need for more samples per Monitoring Point, based upon past monitoring results. The method shall be used for constituents which are historically detected in background at least 50% of the time but less than 85% of the time. The ANOVA shall be carried out at the 95% confidence level. Following the ANOVA, the data from each downgradient Monitoring Point shall be tested at a 99% confidence

level against the pooled background data. If these multiple comparisons cause the Null Hypothesis to be rejected at any Monitoring Point, the Discharger shall conclude that a release is tentatively indicated for that constituent and shall immediately implement the appropriate retest procedure under Part III.D.; or

3. Method of Proportions

This method shall be used for constituents which are historically detected in background at least 10% of the time but less than 50% of the time. This method requires:

- a. at least nine downgradient data points per Monitoring Point per Monitoring Period;
- b. at least thirty data points in the combined data set; and
- c. that $n * P > 5$ (where n is the number of data points in the combined data set and P is the proportion of the combined set that exceeds the Method Detection Limit);

Therefore, the Discharger shall anticipate the number of samples required, based upon past monitoring results. The test shall be carried out at the 99% confidence level. If the analysis results in rejection of the Null Hypothesis, the Discharger shall conclude that a release is tentatively indicated for that constituent or parameter, and shall immediately implement the appropriate retest procedure under Part III.D.; or

C. NON-STATISTICAL METHOD

The Discharger shall use the following non-statistical method for analyzing all constituents which are detected in less than 10% of applicable background samples. Background shall be established in accordance with Part II.C. of this Monitoring and Reporting Program. This method involves a two-step process:

1. From all constituents to which the method applies, compile a list of those constituents which exceed their respective Method Detection Limit (Method Detection Limit) in the downgradient sample of a given Monitoring Point then;
2. Evaluate whether the listed constituents meet either of two possible triggering conditions. Either, the list contains two or more constituents, or contains one constituent which equals or exceeds its Practical Quantitation Limit. If either condition is met the Discharger shall conclude that a release is tentatively indicated and shall immediately implement the appropriate retest procedure under Part III.D.

For each Monitoring Point, the aforementioned list shall be compiled based on either the data from the single sample (for that constituent) taken during that Monitoring Period from that Monitoring Point, or in cases of multiple independent samples, from the sample which contains the largest number of constituents.

D. DISCRETE RETEST

In the event that the Discharger concludes that a release has been tentatively indicated, the Discharger shall carry out the reporting requirements of IV.C.2. and, within 30 days of this indication, collect two new suites of samples for the indicated Constituent(s) of Concern or Monitoring Parameter(s) at each indicating Monitoring Point, collecting at least as many samples per Monitoring Point as were used for the initial test. Resampling of the Background Monitoring Points is optional. As soon as the retest data is available, the Discharger shall use the same statistical method (or non-statistical comparison) as that which provided the tentative indication of a release to separately analyze each of the two suites of retest data for the affected Monitoring Point. For any indicated Monitoring Parameter or Constituent of Concern at an affected Monitoring Point, if the test results of either (or both) of the retest data suites confirms the original indication, the Discharger shall conclude that a release has been discovered and shall carry out the requirements of Part IV.C.4. of this Monitoring and Reporting Program. All

retests shall be carried out only for the Monitoring Point(s) for which a release is tentatively indicated, and only for the Constituent of Concern(s) or Monitoring Parameter(s) which triggered the indication there, as follows:

1. ANOVA Retest

If a (parametric, natural log parametric, or non-parametric) ANOVA method was used in the initial test, the retest shall involve only a repeat of the multiple comparison procedure, carried out separately on each of the two new suites of samples taken from the indicating Monitoring Point;

2. Method of Proportions Retest

If the Method of Proportions statistical test was used, the retest shall consist of a full repeat of the statistical test for the indicated constituent or parameter, carried out separately on each of the two new suites of samples from the indicating Monitoring Point;

3. Non-Statistical Method Retest

The non-statistical method retest involves two separate variants as follows:

- a. For VOC_{water} ; Because the VOC_{water} composite Monitoring Parameters is a single parameter which addresses an entire family of constituents likely to be present in any landfill release, the scope of the laboratory analysis for each of the two retest samples shall be the entire VOC_{water} composite. A confirming retest shall validated the original indication even if the detected constituent(s) in the retest sample(s) differs from those detected in the sample which initiated the retest;
- b. For all other constituents; Because all Constituents of Concern, that are jointly addressed in the non-statistical test in Part III.C., remain as individual Constituents of Concern, the scope of the laboratory analysis for the non-statistical retest of Constituents of Concern shall address only those constituents detected in the sample which initiated the retest.

PART IV: REPORTING**A. GENERAL**

A written Detection Monitoring Report shall be submitted quarterly in accordance with the Monitoring Period dates defined in Part V.H. of this Monitoring and Reporting Program. The Discharger shall submit a report concerning the analysis of all Constituents of Concern each time the analysis is carried out in accordance with this Monitoring and Reporting Program. All reports, required under this section, shall be submitted no later than thirty days following the end of their respective Monitoring Period. All reports shall be comprised, as appropriate, of at least the following:

1. Letter of Transmittal

A letter transmitting the essential points shall accompany each report. Such a letter shall include a discussion of any violations found since the last such report was submitted, and shall describe actions taken or planned for correcting those violations. If the Discharger has previously submitted a detailed time schedule for correcting said requirement violations, a reference to the correspondence transmitting such schedule will be satisfactory. If no violations have occurred since the last submittal, this shall be stated in the letter of transmittal. Monitoring reports and the letter transmitting the monitoring reports shall be signed by a principal executive officer at the (department head) level of vice president or above, or by his/her duly authorized representative, if such a representative is responsible for the overall operation of the facility from which the discharge originates. The letter shall contain a statement by the official, under penalty of perjury, that to the best of the signer's knowledge the report is true, complete, and correct.

2. Compliance Evaluation Summary

The summary shall contain at least:

- a. For each monitored ground water body, a description and graphical presentation of

the velocity and direction of ground water flow under/around the Unit, based upon water level elevations taken during the collection of the water quality data submitted in the report.

- b. For each monitoring well addressed by the report: a description of; the method and time of water level measurement, the type of pump used for purging and the placement of the pump in the well, and the method of purging (the pumping rate, the equipment and methods used to monitor field pH, temperature, and conductivity during purging, the calibration of the field equipment, results of the pH, temperature, conductivity, and turbidity testing, the well recovery time, and the method of disposing of the purge water).

- c. For each Monitoring Point and Background Monitoring Point addressed by the report, a description of the type of pump, or other device, used, its placement for sampling, and a description of the sampling procedure (number of samples, field blanks, travel blanks, and duplicate samples taken; the type of containers and preservatives used; the date and time of sampling; the name and qualifications of the person actually taking the samples; description of any anomalies).

- d. Discussion of the Post-Sampling Purge method in accordance with Chapter 15 [§2550.7(e)(12)(B) of Article 5].

3. Map

A map or aerial photograph showing the locations of observation stations, Monitoring Points, and Background Monitoring Points. Groundwater contours shall be indicated to the greatest degree of accuracy possible.

4. Laboratory Results

Laboratory statements, concerning the results of all analyses, demonstrating compliance with Part II of this Monitoring and Reporting Program. Additionally results of all sampling and analyses performed at the site, out side

the requirements of this Monitoring and Reporting Program, shall be reported and summarized.

5. Graphical Presentation of Analytical Data

For each Monitoring Point and Background Monitoring Point, submit in graphical format the laboratory analytical data for all samples taken within the previous two calendar years. Each such graph shall plot the concentration of one or more constituents over time for a given Monitoring Point or Background Monitoring Point, at a scale appropriate to show trends or variations in water quality. Maximum contaminant levels (MCL) shall be graphed along with constituent concentrations where applicable. Graphs shall plot each datum, rather than plotting mean values. For any given constituent or parameter, the scale for background plots shall be the same as that used to plot downgradient data. On the basis of any aberrations noted in the plotted data, the Executive Officer may direct the Discharger to carry out a preliminary investigation [§2510(d)(2) of Article 5], the results of which will determine whether or not a release is indicated.

6. Standard Observations

A summary and certification of completion of all Standard Observations (Part V.I.) for the Unit, for the perimeter of the Unit, and for the Receiving Waters.

B. ANNUAL SUMMARY REPORT

The Discharger shall submit an annual report to the Board covering the previous monitoring year. The annual Monitoring Period ends December 31. This report may be combined with the quarterly Monitoring Report and must meet the general requirements outlined in Part IV.A. above in addition to the following:

1. Graphical Presentation of Analytical Data

For each Monitoring Point and Background Monitoring Point, submit in graphical format the laboratory analytical data for all samples taken within at least the previous five

calendar years. Each such graph shall plot the concentration of one or more constituents over time for a given Monitoring Point or Background Monitoring Point, at a scale appropriate to show trends or variations in water quality. Maximum contaminant levels (MCL) shall be graphed along with constituent concentrations where applicable. Graphs shall plot each datum, rather than plotting mean values. For any given constituent or parameter, the scale for background plots shall be the same as that used to plot downgradient data. On the basis of any aberrations noted in the plotted data, the Executive Officer may direct the Discharger to carry out a preliminary investigation [§2510(d)(2) of Article 5], the results of which will determine whether or not a release is indicated.

2. Analytical Data

All monitoring analytical data obtained during the previous year, presented in tabular form as well as on 3.5" diskettes, in MS-DOS/ASCII format or in another file format acceptable to the Executive Officer. The Board regards the submittal of data in hard copy and on diskette as "...the form necessary for..." statistical analysis [§2550.8(h) of Article 5], in that this facilitates periodic review by the Board's statistical consultant. Additionally complete data histories of each well shall be submitted in hard copy form or on diskette.

3. Leachate Results

Results of annual leachate system testing as required by §2543(d) of Article 5.

4. Discussion

A comprehensive discussion of the compliance record, the result of any corrective actions taken or planned which may be needed to bring the Discharger into full compliance with the waste discharge requirements, and progress of the cleanup operation. A summary of the ground water and surface water analyses, indicating any changes made since the previous annual report.

November 18, 1994

5. Map

A map showing the areas where filling has taken place during the previous calendar year. Indicate areas, if any, in which filling has been completed or intermediate cover has been placed.

C. CONTINGENCY RESPONSE

1. Leachate Seep

The Discharger shall, within 24 hours report by telephone concerning the discovery any previously unreported seepage from the disposal area. A written report shall be filed with the Board within seven days, containing at least the following information:

- a. Map;—A map showing the location(s) of seepage;
- b. Flow rate;—An estimate of the flow rate;
- c. Description;—A description of the nature of the discharge (e.g., all pertinent observations and analyses); and
- d. Corrective measures; approved (or proposed for consideration) by the Regional Water Board Executive Officer.

2. Response to an Initial Indication of a Release

Should the initial statistical or non-statistical comparison (under Part III. B. or C. of this Monitoring and Reporting Program) indicate that a release is tentatively identified, the Discharger shall;

- a. within 24 hours, notify their designated Regional Water Board staff contact verbally as to the Monitoring Point(s) and constituent(s) or parameter(s) involved;
- b. provide written notification by certified mail within seven days of such determination; and

- c. carry out a discrete retest in accordance with Part III.D. of this Monitoring and Reporting Program (Monitoring and Reporting Program).

If the retest confirms the existence of a release, the Discharger shall carry out the requirements of Part C.4. In any case, the Discharger shall inform the Board of the outcome within 24 hours of results becoming available, following up with written results submitted by certified mail within seven days.

3. Physical Evidence of a Release

If either the Discharger or the Board Executive Officer determines that there is significant physical evidence of a release [23 CCR §2550.1(3)], the Discharger shall conclude that a release has been discovered and shall:

- a. within seven days notify the Board of this fact by certified mail (or acknowledge the Regional Water Board's determination);
- b. carry out the requirements of Part C.4. for all potentially-affected monitored media; and
- c. carry out any additional investigations stipulated in writing by the Board Executive Officer for the purpose of identifying the cause of the indication.

4. Release Discovery Response

If the Discharger concludes that a release has been discovered the following steps shall be carried out:

- a. If this conclusion is not based upon monitoring for all Constituents of Concern, pursuant to Part I.E.5. of this Monitoring and Reporting Program, then the Discharger shall, sample for all Constituents of Concern at all Monitoring Points in the affected medium and submit them for laboratory analysis within thirty days of discovery. Within seven days of receiving the laboratory analytical results,

the Discharger shall notify the Board, by certified mail, of the concentration of all Constituents of Concern at each Monitoring Point; this notification shall include a synopsis showing, for each Monitoring Point, those constituents that exhibit an unusually high concentration. Because the data from this scan is not to be statistically tested against background, only a single datum is required for each Constituent of Concern at each Monitoring Point [23 CCR §2550.8(k)(1)];

- b. The Discharger shall, within 90 days of discovering the release, submit a Revised Report of Waste Discharge proposing an Evaluation Monitoring and Reporting Program that;

- (1) Meets the requirements of 23CCR §2550.8(k)(5) and 23 CCR §2550.9, and

- (2) Satisfies the requirements of 40 CFR §258.55(g)(1)(ii) by committing to install at least one monitoring well at the facility boundary directly downgradient of the center of the release, immediately after delineating the nature and extent of the release under 23 CCR §2550.9(b);

- c. The Discharger shall, within 180 days of discovering the release, submit a preliminary engineering feasibility study meeting the requirements of 23 CCR §2550.8(k)(6); and

- d. The Discharger shall immediately begin delineating the nature and extent of the release by installing and monitoring assessment wells as necessary to assure that the Discharger can meet the requirement [under 23 CCR §2550.9(b)] to submit a delineation report within 90 days of when the Board directs the Discharger to begin the Evaluation Monitoring and Reporting Program. This report shall show the vertical and horizontal limits of the release for all Constituents of Concern. This delineation effort shall be carried out in addition to any ongoing Monitoring and Reporting Program (e.g., Detection Monitoring and Reporting Program); nevertheless, the Discharger's delineation effort shall encompass all relevant monitoring data.

5. Release Beyond Facility Boundary

Any time the Discharger concludes (or the Executive Officer directs the Discharger to conclude) that a release from the Unit has proceeded beyond the facility boundary, the Discharger shall so notify all persons who either own or reside upon the land that directly overlies any part of the plume (Affected Persons).

- a. Initial notification to Affected Persons and owners if affected property shall be accomplished within 14 days of making this conclusion and shall include a description of the Discharger's current knowledge of the nature and extent of the release.
- b. Subsequent to initial notification, the Discharger shall provide updates to all Affected Persons, including any persons newly affected by a change in the boundary of the release, within 14 days of concluding there has been any material change in the nature or extent of the release.

November 18, 1994

- c. Each time the Discharger sends a notification to Affected Persons (under a. or b., above), the Discharger shall, within seven days of sending such notification, provide the Board with both a copy of the notification and a current mailing list of Affected Persons.

D. RESPONSE TO VOC DETECTION IN BACKGROUND

1. Except as indicated in D.2. below, any time the laboratory analysis of a sample from a Background Monitoring Point shows either (1) two or more VOCs above their respective Method Detection Limit, or (2) one VOC above its respective Practical Quantitation Limit, the Discharger shall;
 - a. Within 24 hours, notify the Board by phone that possible Background Monitoring Point contamination has occurred,
 - b. Follow up with written notification by certified mail within seven days, and
 - c. Within thirty days, obtain two new independent VOC samples from that Background Monitoring Point and send them for laboratory analysis of all detectable VOCs.

If either or both the new samples validates the presence of VOC(s), at the Background Monitoring Point, the Discharger shall:

- a. Within 24 hours, notify the Board about the VOC(s) verified to be present at that Background Monitoring Point,
 - b. Provide written notification by certified mail within seven days of validation; and
 - c. Within 180 days of validation, submit a report, acceptable to the Executive Officer, which; examines the possibility that the detected VOC(s) originated from other than the Unit, and proposes appropriate changes to the Monitoring and Reporting Program.
2. If the Executive Officer determines, after reviewing the report submitted under Part IV.D.1. above, that the VOC(s) detected originated from a source other than the Unit, the Executive Officer will make appropriate changes to the Monitoring and Reporting Program.
 3. If the Executive Officer determines, after reviewing the report submitted under Part IV.D.1., that the detected VOC(s) most likely originated from the Unit, the Discharger shall assume that a release has been detected and shall immediately begin carrying out the requirements of Part IV.C.4. of this Monitoring and Reporting Program.

PART V: DEFINITION OF TERMS**A. AFFECTED PERSONS**

All individuals who either own or reside upon the land that directly overlies any part of that portion of a gas- or liquid-phase release that has migrated beyond the facility boundary.

B. CONSTITUENTS OF CONCERN (COC)

Those constituents which are likely to be in the waste in the Unit or which are likely to be derived from waste constituents, in the event of a release. The Constituents of Concern for this Unit are listed in Part I.E.5.

C. FACILITY-SPECIFIC METHOD DETECTION LIMIT (METHOD DETECTION LIMIT)

The lowest concentration at which a given laboratory, using a given analytical method, to detect a given constituent, (in spite of any Matrix Effect) can regularly differentiate, with 99% reliability, between a sample which contains the constituent and one which does not.

D. FACILITY-SPECIFIC PRACTICAL QUANTITATION LIMIT (PRACTICAL QUANTITATION LIMIT)

The lowest constituent concentration a given laboratory, using a given analytical method, to determine the concentration of a given constituent (in spite of any Matrix Effect), can regularly quantify within specified limits of precision acceptable to the Executive Officer.

E. MATRIX EFFECT

Any increase in the Method Detection Limit or Practical Quantitation Limit for a given constituent as a result of the presence of other constituents, either of natural origin or introduced through a release, that are present in the sample being analyzed.

F. MONITORED MEDIA

Those water bearing media that are monitored pursuant to this Monitoring and Reporting Program. The Monitored Media may include: (1) ground water in the uppermost aquifer, in any other portion of the zone of saturation (§2601 of Chapter 15) in which it would be reasonable to anticipate that waste constituents migrating from the Unit could be detected, and in any perched zones underlying the Unit, (2) any bodies of surface water that could be measurably affected by a release, and (3) soil pore liquid beneath and/or adjacent to the Unit.

G. MONITORING PARAMETERS

A short list of constituents and parameters used for the majority of monitoring activity. The Monitoring Parameters for this Unit are listed in Part I.E.3. of this Monitoring and Reporting Program.

H. MONITORING PERIOD

The database duration separating the submittal of a monitoring report and the time of the next report submittal. The Monitoring Period for analysis of all Constituents of Concern is five years or each time a new release is indicated; the Monitoring Period for the Monitoring Parameters is quarterly. Quarterly monitoring will be performed within the following time frames: [Winter (January 1 to March 31), Spring (April 1 to June 30), Summer (July 1 to September 30), Fall (October 1 to December 31)]. The due date for any given report will be 30 days after the end of its Monitoring Period, unless otherwise stated.

I. STANDARD OBSERVATIONS**1. For Receiving Waters;**

- a. Floating and suspended materials of waste origin (e.g. wind blown trash); presence or absence, source, and size of affected area;
- b. Discoloration and turbidity; description of color, source, and size of affected area;

November 18, 1994

- c. Evidence of odors; presence or absence, characterization, source, and distance of travel from source.
 - d. Evidence of beneficial use; presence of water-associated wildlife.
 - e. Flow rate to the receiving water.
2. Along the perimeter of the Unit:
- a. Evidence of liquid leaving or entering the Unit, estimated size of affected area, and flow rate (show affected area on map).
 - b. Evidence of odors; presence or absence, characterization, source, and distance of travel from source.
 - c. Evidence of erosion and/or of exposed refuse.
 - d. Inspection of all storm water discharge locations for evidence of non-storm water discharges during dry seasons, and integrity during wet seasons.

3. For the Unit:

- a. Evidence of ponded water at any point on the waste management facility (show affected area on map).
- b. Evidence of odors; presence or absence, characterization, source, and distance of travel from source.
- c. Evidence of erosion and/or of daylighted refuse.
- d. Compliance with Storm Water Pollution Prevention Plan, insuring that the terms of the general permit are properly implemented.
- e. Integrity of all drainage systems

J. RECEIVING WATERS

Any surface water which actually or potentially receives surface or ground waters which pass over, through, or under waste materials or contaminated soils.

K. VOLATILE ORGANICS COMPOSITE MONITORING PARAMETER FOR WATER (VOC_{water})

VOC_{water} a composite parameter that encompasses a variety of VOCs. The constituents addressed by the VOC_{water} Composite Monitoring Parameter include all VOCs detectable using USEPA Method 8260, including at least all 47 VOCs listed in Appendix I to 40 CFR 258, attachment "D" to this Monitoring and Reporting Program, and all unidentified peaks.

ORDERED BY:


Executive Officer

11-22-94

Date

